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1

Subscriber Management

This chapter explains how to specify subscriber details for service providers.

This chapter contains the following topics.

Subscriber Management Module

Credit Cards

Subscriber Batch

Customer

Closed User Groups

Friends and Family Black List

Friends and Destination Black List

Friends and Destination Prefix Map

Profile Group Fields

UBE Account Balancing

Subscriber Management Module

The Subscriber Management screen lets you configure the subscribers to CCS customers. It contains these tabs:

- Closed User Groups
- Credit Cards
- Customer
- Friends and Destination Black List
- Friends and Destination Prefix Map
- Friends and Family Black List
- Product Type
- Profile Group Fields
- Subscriber
- Subscriber Batch
- UBE Account Balancing

Note: The **Subscriber** and **Product Type** tabs are documented in separate chapters.

Accessing the Subscriber Management screen

Follow these steps to open the Subscriber Management screen.

1. Select the **Services** menu from the SMS main screen.

   Note: The services which are available under the **Services** menu depend on the components which have been installed, and the permissions of the user. The services displayed in this screen shot may not match the services you have available on your system.

2. Select **Prepaid Charging > Subscriber Management.**

   Result: You see the Subscriber Management screen.

Credit Cards

The **Credit Cards** tab enables credit card data to be managed securely. You can perform the following tasks from the **Credit Cards** tab:

- Searching for credit cards
- Adding credit cards
- Registering subscribers to credit cards
- Editing credit cards
- Deleting credit cards

You can also manage a subscriber's credit cards from the Add Subscriber or Edit Subscriber screens. See Subscriber Management - Subscribers for details.

Note: To use the legacy credit card options, the **sms.jnlp** file must include the application property `LegacyCC=True`. See *SMS Technical Guide* for more information.

Topics:

About Auditing Credit Card Changes

Searching for credit cards

Adding credit cards

New Credit Card fields

Editing credit cards

Edit Credit Card fields

Registering subscribers to credit cards

Deleting credit cards

About Auditing Credit Card Changes

The EDR auditing feature keeps track of changes to subscribers credit cards. When EDR auditing is enabled, a user who is updating a subscriber's credit card details is forced to enter a reason for the change in a special **Change Reason** dialog box; for example, when:

- Adding a new credit card
- Editing or deleting an existing credit card
- Registering or deregistering a credit card

- Freezing a credit card

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the BE EDR. You can view this information by displaying the BE EDR in the EDR Viewer.

Credit card auditing is enabled by the EDR auditing global configuration option. For more information, see the discussion on EDR auditing in Global Configuration.

Searching for credit cards

Follow these steps to search for existing credit cards.

1. On the **Credit Cards** tab, select the credit card masking rule from the **Masking rule** list. For more information about masking rules, see About Credit Card Security.
2. Specify the search criteria by entering search values in one or more of the following search fields:
   - **Display Number** – To search on the credit card display number
   - **Calling card ID** – To search for credit cards already registered to the subscriber with the specified subscriber ID
   - **Tokenised number** – To search on a tokenized credit card number
3. Select the credit card states to search for. The **Active** and **Frozen** states are selected by default.
4. Click **Search**.

The table displays the first 100 records that match the search criteria. If the credit cards you want are not displayed and the search returns more than 100 records, enter a longer search strings in the search fields, and click **Search** again.

Adding credit cards

Follow these steps to add a credit card record on the **Credit Card** tab.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. Click **New** on the **Credit Card** tab.

   The New Credit Card screen displays.
3. Fill in the credit card details. For more information, see New Credit Card fields.
4. (Optional) Register a subscriber to the credit card. See Registering subscribers to credit cards for details.

   Registered new cards can be in a frozen or an active state. Unregistered new cards must be set to the frozen state.
5. Click **Save**.
6. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
7. Click **OK**.

   You are returned to the **Credit Cards** tab. To see the card just added, select the relevant search criteria and click **Search**.

Related topic

Credit Cards

New Credit Card fields

This table describes the function of each field on the New Credit Card screen.

Field	Description
Subscriber ID	Displays the ID of the subscriber. If you create a credit card through: • A subscriber screen, this field is set automatically and cannot be changed. For more information, see Adding Subscribers, Editing Subscribers, and Deleting subscribers. • The **Credit Card** tab, this field is blank. You can register this credit card to a subscriber immediately by clicking **Subscriber**, or you can register the credit card at a later date. Once registered, the ID of the selected subscriber displays in this field. For more information, see Registering subscribers to credit cards.
Full Credit Card Number	The full credit card number, with no spaces between the digits. **Note:** This field is available only on the New Credit Card screen. All other credit card screens contain the display name and the tokenized number.
Masking Rule	The rule used to mask the credit card number. For more information about masking rules, see About Credit Card Security.
Expiry Date	The credit card's expiry date. Select the month and year from the month and year lists.
Name on Card	(Optional) The name of the account holder as it is written on the credit card.
CVC	The three or four digit credit verification code (CVC) that is printed on the credit card. The CVC provides the credit card owner with additional security when making purchases.
Frozen	When selected, the credit card is in a frozen state. When not selected, the state is active. Registered new cards can be frozen or active. Unregistered new cards can only be frozen. **Note:** This field is visible only when you open the New Credit Card screen from the Edit Subscriber, Credit Cards option.
Warning	Displays a warning message at the bottom of the screen if the checksum failed.

Related topic

Credit Cards

Editing credit cards

Follow these steps to edit a credit card record.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. Click the **Credit Card** tab, and select the credit card to edit from the table on the tab. For information about searching for credit cards, see Searching for credit cards.
3. Click **Edit**.

   The Edit Credit Card screen displays and shows a list of all the registration records for the credit card. For information about the displayed fields, see Edit Credit Card fields.
4. (Optional) Change the following details as required:
   - Expiry date details
   - Name on card
   - CVC number
   - Freeze or make active the credit card state
5. (Optional) To register a subscriber to the credit card, click **Register**. See Registering subscribers to credit cards.
6. (Optional) To deregister a subscriber from the credit card:
   a. Select the subscriber from the table and click **Deregister**.
   b. Click **Deregister** to confirm.

   Note: You cannot deregister the primary subscriber.
7. (Optional) To freeze a subscriber's primary wallet:
   a. Select the subscriber and click **Freeze Wallet**.
   b. Click **Freeze**.
   c. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**.
8. If the **Registration State** is `Pending`, and you want to confirm the subscriber's registration to the credit card, click **Confirm**.
9. If there is more than one subscriber registered to a frozen credit card, register the primary subscriber by selecting the required subscriber, and then clicking **Primary**.
10. Click **Save**.
11. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
12. Click **OK**.

Related topic

Credit Cards

Edit Credit Card fields

This table describes the function of each field on the Edit Credit Card screen.

Field	Description
Display Number	The credit card number (prefix + padding + suffix), as specified by the associated masking rule. For more information about masking rules, see About Credit Card Security.
Tokenised Number	The tokenized credit card number.
Expiry Date	The credit card's expiry date. Select the month and year from the month and year lists.
Name on Card	(Optional) The name of the account holder as written on the credit card.
CVC	The three or four digit credit verification code (CVC) that is printed on the back of the credit card. The CVC provides the credit card owner with additional security when making purchases.
Frozen	When selected the credit card is in a frozen state. When not selected the state is active. You can unfreeze a credit card only if it is registered.
Registered Subscribers	This table displays the: • Subscriber ID • Registration state – The registration state (Primary, Secondary, Pending, or New) of the registered subscriber • Primary wallet state – The registered subscriber's primary wallet state

Registering subscribers to credit cards

Follow these steps to register a subscriber to a credit card from the New Credit Card screen or the Edit Credit Card screen.

1. Do one of the following:
   - From the New Credit Card screen, click **Subscriber**.
   - From the Edit Credit Card screen, click **Register**.

   The Register Subscriber to Credit Card screen appears.
2. Enter one or more initial digits of the subscriber number in the **Subscriber ID** field.
3. Select:
   - **Exact Match** to search for the matching subscriber.
   - **Prefix Match** to search for all subscribers with IDs that match the entered prefix.
4. Click **Search**.

   The search returns a maximum of 100 records.

5. From the search results table, select the subscriber you want to register to the credit card and click **Register**.
6. If EDR auditing is enabled, the **Change Reason** dialog displays. In the **Change Reason** field, enter the reason for the change and click **OK**.

   The reason can be up to 200 characters long.

Related topic

Credit Cards

Deleting credit cards

Follow these steps to delete credit card records.

1. Search for the credit card to delete. See Searching for credit cards.
2. Select the credit card to delete, and then click **Delete**.
3. If EDR auditing is enabled, the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
4. Click **Delete**.

   The credit card is removed from the results list.

   Note: A credit card is removed from the database only if it is in the primary state. When you delete a frozen credit card, it is moved to a deleted state, but it is not removed from the database.

Related topic

Credit Cards

Subscriber Batch

The **Subscriber Batch** tab lets you view, add, modify and delete batches of subscribers.

Tip: It is also possible to work with subscribers using the ccsAccount command line tool. For more information about this tool, see *CCS Technical Guide*.

Topics:

Finding subscriber batches

Adding subscriber batches

Subscriber Batch Fields

Editing subscriber batches

Deleting account batches

Finding subscriber batches

To find specific subscriber batches in the **Subscriber Batch** tab:

1. Enter the first few characters of the subscriber ID and select a batch state.
2. Click **Search**.

Result: The table displays the first 100 records which match the search criteria. Results include creation date. If the subscriber batch you want is not displayed and more than 100 records were returned, enter a longer search string and click **Search** again.

Adding subscriber batches

Follow these steps to add a new subscriber batch.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Subscriber Batch** tab in the Subscriber Management screen, click **New**.

   Result: You see the New Subscriber Batch screen.
3. Fill in the fields, as described in New subscriber batch fields.

   Once you have filled in all the fields, the **Save** button becomes active.
4. Click **Save**.

   Result: If successful, you see a message confirming the subscriber batch has been created.
5. Click **OK**.

Related topic

Subscriber Batch

Subscriber Batch Fields

This table describes the function of each field.

Field	Description
Batch Size	The number of subscribers in the batch.
Subscriber List Filename	Name of the file containing the list of subscribers to use when creating the batch. Each line of the file can include either one subscriber or a range of them. Comments are ignored. **Example:** Subscriber List file content. # this is a comment 482345932 482464935-482464945
Result Filename	The name of the file to create for the batch.
Charging Domain	List of domains on which wallets for this subscriber batch can be stored. This drop down list is populated by the domains configured on the **Domain** tab on the Service Management screen.

Field	Description
Tracking Domain	List of available domains for fraud tracking and promotional balance types. This drop down list is populated by the domains configured on the **Domain** tab on the Service Management screen. **Note:** The tracking domain must be a VWS domain and will be available if the charging domain is not a VWS domain.
Product Type	List of available product types. This drop down list is populated by the product types configured on the **Product Type** tab on the Subscriber Management screen.
Wallet Currency	The currency the wallet created with these subscribers should use. This drop down list is populated by the currencies configured on the **Currency** tab on the Service Management screen.
Maximum Concurrent Accesses	Sets the default total number of accesses that can be supported against the subscriber at any one time.
Use Subscriber ID	When selected, the card number range fields are grayed out and the subscriber ID is used to provide the card number.
Allocate in Range	The starting and ending points for the card number range.
Encryption File	The context string to be used for encryption. This can have different values, depending on your setup. Acceptable values for the supported DES encryption method include a PIN length that should be a number between 4 and 20.
Add PINS to accounts	When selected, the card number has an associated PIN generated from the selected **Encryption Method** and **PIN Length** fields. When not selected there is no PIN associated with the card number.
Encryption Method	The pluggable authentication module which will be used for generation of encrypted of PINs for this batch. The module is used to generate random PINs of the length specified (PIN Length), and then encrypt them for storing in the database.
Creation Date	Indicates the creation date of the batch.
PIN Length	The length of the PIN that will be generated for accounts in this batch. This is the actual length of the non encrypted PIN and must be a minimum of 4 digits to a maximum of 20 digits.
Subscriber ID to Wallet Reference	Subscriber ID and related wallet reference. **Example:** `123456 ref1334`

Editing subscriber batches

Follow these steps to edit an existing subscriber account batch.

Tip: By editing a subscriber batch, you will change the batch state. Changing the batch state enables you to activate subscriber batches.

Note: The **Subscriber Batch** tab and **Edit Subscriber Batch** tab have a creation date read-only value which preserves the creation date when a batch is edited.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Subscriber Batch** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Subscriber Batch screen.
4. You can only change the **Batch State** field. Changing the batch state to active activates the subscriber batch.
5. Click **Save**.

Related topic

Subscriber Batch

Deleting account batches

Follow these steps to delete an existing subscriber batch.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Select Batch** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

Related topic

Subscriber Batch

Customer

This screen enables you to add, modify or delete customers.

The Customer screen displays the customers that have been set up for the service provider.

Once you have set up customers, you can assign subscriber accounts to a specific customer.

Topics:

Finding customers

Adding customers

Editing customers

Deleting customers

Finding customers

To find a specific customer in the **Customer** tab, enter the first few characters of the customer's name, and click **Search**.

Result: The grid will display the first 100 records which begin with the characters searched for. If the required customer is not displayed and more than 100 records were returned, enter a longer search string and click **Search** again.

Adding customers

Follow these steps to add a new customer for a service provider.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Customer** tab, click **New**.

   Result: You see the New Customer screen.
3. In the **Name** field, enter the name of the new customer.
4. The name must be completed. Customer names must be unique for the service provider. Special characters and case do not make a distinction between names. For example, `Super Savers` is the same as `Super saver's`.
5. In the **Description** field, enter the description of the new customer.
6. In the **Reference** field, enter a reference for the new customer.
7. Click **Save**.

Related topic

Customer

Editing customers

Follow these steps to edit an existing customer.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Customer** tab, select the customer record to edit.

   Tip: If the required customer is not displayed, you can try searching for them as described in Finding customers.
3. Click **Edit**.

   Result: You see the Edit Customer screen.
4. Edit the details as described in Adding customers.
5. Click **Save**.

Related topic

Customer

Deleting customers

Follow these steps to delete an existing customer.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Customer** tab, select the customer to delete.

   Tip: If the required customer is not displayed, you can try searching for them as described in Finding customers.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Customer prompt.
5. Click **OK**.

Related topic

Customer

Closed User Groups

The **Closed User Groups** tab lets you define groups of users (Closed User Groups), that use an alternative tariff plan when both the calling and the called numbers are part of the same group. The alternative tariff plan normally reduces the rate of calls or provides free calls.

A CUG has the following membership rules:

- A CUG is defined for a specific service provider, therefore only the subscribers of that service provider may belong to that CUG.
- Subscribers may be members of more than one CUG.

A CUG Feature node must be included in the control plan to determine whether the calling and the called numbers are in the same CUG.

Closed user groups may also contain **Virtual Members**. Virtual members are defined as single numbers or number ranges. An MSISDN calling a number that resides in any virtual member range in any CUG in which that MSISDN is also a member is deemed to be making a closed user group call, and can be billed accordingly.

Tip: You can also define CUG membership through the Subscriber screens.

Topics:

Adding closed user groups

Closed User Group fields

Editing closed user groups

Deleting closed user groups

Adding closed user groups

Follow these steps to add a Closed User Group (CUG) and its members.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Closed User Groups** tab, click **New**.

   The New Closed User Group dialog displays. For information about the fields on this screen, see Closed User Group fields.
3. For each member that you want to add, enter the subscriber MSISDN in the **MSISDN** field, and click **Add**.
4. For each virtual CUG member that you want to add, perform the following steps:
   a. Select either **Single number**, **Range**, or **Pattern**.
   b. Depending on your previous selection, specify the virtual member number, number range, or prefix and length.
   c. Click **Add**.
5. When you have completed adding members to the CUG, click **Save**.

Related topic

Closed User Groups

Closed User Group fields

This table describes the function of each field in the New and Edit Closed User Group dialogs.

Field	Description
Name	Unique name for this closed user group. After saving a new closed user group you can view, but not edit the closed user group name.
Tariff Plan	The tariff plan to apply to phone calls between members of this closed user group.
Members	Lists the subscriber accounts who are part of this closed user group. You create a member by adding the subscriber's MSISDN to the list of members. **Tip:** Subscribers can be members of more than one CUG.
Virtual Members	Lists the virtual members of the CUG. You create virtual members by providing a single number, a start and end number, or a prefix and a number length.

Editing closed user groups

Follow these steps to edit an existing closed user group (CUG).

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Closed User Groups** tab, select the CUG to edit.

   Tip: You can search for a specific CUG or MSISDN by entering the details in the **Name** and **MSISDN** fields on the tab, and clicking **Search**.
3. Click **Edit**. The Edit Closed User Group dialog opens.

   For more information about the closed user group fields, see Closed User Group fields.
4. Edit the list of members as required. To:
   - Add a new member, enter the MSISDN in the **MSISDN** field, and click **Add**.
   - Delete an existing member, select the member's MSISDN in the Members list and click **Delete**.
5. Edit the list of virtual members as required. To:
   - Add a new entry, enter either the number, number range, or prefix and length for the virtual member entry, and then click **Add**.
   - Delete an entry from the Virtual Members list, select the entry in the list and click **Delete**.
6. Click **Save**.

Related topic

Closed User Groups

Deleting closed user groups

Follow these steps to delete an existing closed user group (CUG).

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Closed User Groups** tab, select the CUG to delete.

   Tip: You can search for a specific CUG or MSISDN by entering the details in the **Name** and **MSISDN** fields on the tab, and clicking **Search**.
3. Click **Delete**.

   The Delete Confirmation prompt displays.
4. Click **OK** to delete the record from the database.

   The record is deleted and the Closed User Groups prompt displays.
5. Click **OK**.

Related topic

Closed User Groups

Friends and Family Black List

Friends and Family Black List numbers are numbers that may not be added to a subscriber’s friends and family list (using the Friends and Family IVR configuration service).

The **Friends and Family (F&F) Black List** tab displays all F&F black list entries. Up to 100 numbers may be added, each up to 32 digits long.

Note: Friends and Family discounts are also configured in a subscriber's product type. For details, see FF White List.

Topics:

Editing the F&F Black List

Editing the F&F Black List

Follow these steps to edit the numbers in the friends and family black list.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Friends and Family Black List** tab, click **Edit**.

   Result: You see the Edit F&F Black List Numbers screen.
3. To add a black listed number, enter the number in the **New Number** field and click **Add**.

   Result: The number is added to the friends and family black list for this service provider.
4. To delete a number, select the number to remove from the list and click **Delete**.

   Result: The number is removed from the list.
5. Click **Save**.

Related topic

Friends and Family Black List

Friends and Destination Black List

Subscribers may not use prefixes contained in the friends and destination black list when setting their Friends and Destination prefix using the Friends and Destination IVR configuration service.

The **Friends and Destination (F&D) Black List** tab displays all F&D black list entries. Up to 100 prefixes may be added, each up to 32 digits long.

Topics:

Adding numbers to the Black List

Adding numbers to the Black List

Follow these steps to edit the numbers in the Friends and Destination Black List.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Friends and Destination Black List** tab, click **Edit**.

   Result: You see the Edit F&D Black List Numbers screen.
3. To add a black listed number, enter the number in the **New Number** field and click **Add**.

Result: The number is added to the friends and destination black list for this service provider.

4. To delete a number, select the number to remove from the list and click **Delete**.

   Result: The number is removed from the list.

5. Click **Save**.

Related topic

Friends and Destination Black List

Friends and Destination Prefix Map

The friends and destination prefix map entries are used to configure the announcements corresponding to a particular friends and destination prefix. These announcements are played to the caller when using the friends and destination IVR configuration service.

You can create groups of prefixes (for example, by region) by mapping all the prefixes in the group to the same announcement. These prefix groups can then be used to apply a discount to multiple destinations instead of to a single number prefix.

Tip: You can order prefixes by prefix or by mapped announcement by clicking on the column title on the **Friends and Destination Prefix Map** tab.

Note: Up to 100 prefix maps can be added.

Topics:

Friends and Destination Prefix Map fields

Adding Friends and Destination Prefix Mappings

Editing Friends and Destination Prefix Mappings

Deleting Friends and Destination Prefix Mappings

Friends and Destination Prefix Map fields

This table describes the function of each field.

Field	Description
Prefix	The prefix for the friends and destination destination number.
Announcement Set	The ACS announcement set which contains the announcement which should be played for this prefix.
Announcement Entry	The announcement which should be played for this prefix. **Note:** Prefixes which use the same announcement entry will be grouped together.

For more information about ACS announcements, see *ACS User's Guide*.

Adding Friends and Destination Prefix Mappings

Follow these steps to add a new Friends and Destination Prefix Announcement Mapping.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Friends and Destination Prefix Map** tab, click **New**.

   Result: You see the New Prefix Announcement Mapping screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Friends and Destination Prefix Map fields.
4. Click **Save**.

Related topic

Friends and Destination Prefix Map

Editing Friends and Destination Prefix Mappings

Follow these steps to edit an existing Friends and Destination Prefix Announcement Mapping.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the grid on the **Friends and Destination Prefix Map** tab, select the record you want to edit.
3. Click **Edit**.

   Result: You see the Edit Prefix Announcement Mapping screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Friends and Destination Prefix Map fields.
5. Click **Save**.

Related topic

Friends and Destination Prefix Map

Deleting Friends and Destination Prefix Mappings

Follow these steps to delete an existing Friends and Destination Prefix Announcement Mapping.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Friends and Destination Prefix Map** tab, select the record to delete.
3. Click **Delete**.
4. **Result:** You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

6. **Result:** The record is deleted and you see the F&D Prefix Map prompt.
7. Click **OK**.

Related topic

Friends and Destination Prefix Map

Profile Group Fields

The **Profile Group Fields** tab lets you define and manage subscriber profile groups and fields dynamically. You can:

- Specify a set of Profile Groups
- Specify the fields to include in each group

Two types of profile group fields may be specified:

- BPL tasks (defined on the Task Management screen)
- Profile Fields (defined on the **Profile Details** tab in the ACS Configuration screen)

You can view and edit the Profile Group field values, and execute the BPL tasks on the Edit Subscriber screen.

Note: Some other applications, for example Messaging Manager, will configure profile group fields on installation. Refer to the appropriate guide for information about specific profile group fields.

For more information about setting up BPL tasks, see Task Management.

Profile tags

The tag names for profile fields are defined on the **Profile Tag Details** tab in the ACS Configuration screen.

This table describes the supported data types for profile tags.

Profile Field Tag Type	Description
BOOLEAN	A single value: • True • False
BYTE	A single digit integer (signed).
DATE	A date.
INTEGER	An integer value (signed).
LNSTRING	A limited numeric string. Valid characters are 0-9. **Note:** The limits for LNSTRING field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).

Profile Field Tag Type	Description
LOPREFIX	A limited ordered prefix tree. This is made up of a limited list of numbers. **Note:** The limits for LOPREFIX field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
NSTRING	Numeric string. Valid characters are 0-9.
OPREFIX	An ordered prefix tree comprising an ordered list of numbers.
PREFIX	A prefix tree comprising a list of numbers.
STRING	A non limited ASCII string.
ZONE	A set of shape definitions for the area covered by the zone. Shapes may be circular or rectangular and are defined by their coordinates. **Note:** You can set up and populate zone tags but they may only be used if the Location Capabilities Pack (LCP) is installed.

Configuring Zone Profile Tags

You can define a set of zones that can be used to determine the location of a subscriber.

To define a zone, you must first define the zone profile group field using a ZONE profile tag.

ZONE profile tags are configured in ACS. The LCP ZONE profile tags, Home and Work, are all configured at installation. All other zone profile tags are user defined and must conform to the configuration shown in this table.

Profile Tag Name	Profile Tag Type	Profile Tag	Parent Profile Tag	Comment
LCP ZONES	Profile Block	4128769	NA	Configured during installation.
Home	ZONE	4128770	4128769	Configured during installation.
Work	ZONE	4128771	4128769	Configured during installation.
ZoneName	ZONE	An integer value in the range: 4128772 to 4194305	4128769	User defined. **Warning:** The parent profile tag must be set to 4128769 (the profile tag value for LCP ZONES).

For more information about profile tags, see *ACS User's Guide*.

User access

Users can access profile group fields and profile group BPLs from the Profile Groups option in the Edit Subscriber screen, provided the users have sufficient privileges.

You manage user access to profile groups, profile fields, and BPLs through the User Templates defined in the SMS User Management screen. It can be set for all fields and BPLs in the profile group, or for selected fields and BPLs. The required level of access privilege for each individual field or BPL must be added manually to the template.

This table describes the privileges that may be assigned to each profile field and BPL.

Privilege	Description
Read/Only	The field's value (if present) will be visible to the user through the screens, but they will not be able to edit, create, or delete it.
Read/Modify	The field's value (if present) will be visible to the user through the screens, and they will be able to edit it, but they will not be able to create or delete it.
Create/Delete	The field's value (if present) will be visible to the user through the screens, and they will be able to edit, create and delete it.
Execute	This BPL will be visible to the user through the screens, and they will be able to execute it.

Note: For information about creating and maintaining user Templates, see *SMS User's Guide*.

Adding profile tag groups

Follow these steps to add a new profile tag group.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Profile Group Fields** tab, click **New Group**.

   Result: You see the New Profile Tag Group screen.
3. In the **Name** field, enter the name for this profile tag group.
4. The **Permission Name** field displays the permission name for this group. It is used when configuring the user template in ACS.

   To set the permission name to the standard name, ensure the **Auto Populate Permission Name** check box is selected.

   The standard format is:

   ```
   <Service Provider>-<Profile Tag Group Name>
   ```

   To set the Permission Name to something other than the standard name:

   - Clear the **Auto Populate Permission Name** check box
   - In the **Permission Name** field, enter the name for this profile tag group.

5. Click **Save**.

Related topic

Profile Group Fields

Editing profile tag groups

Follow these steps to edit an existing Profile Tag Group.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Profile Group Fields** tab, select the **Group** you want to edit.
3. Click **Edit Group**.

   Result: You see the Edit Profile Tag Group screen.
4. Edit the **Name** for the profile tag group.

   Note: The **Permission Name** field is not editable.
5. Click **Save**.

Related topic

Profile Group Fields

Adding a new profile group field

Follow these steps to add a profile group field to a profile group.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.

   On the **Profile Group Fields** tab, select the **Group** you want from the drop down list.
2. Click **New**.

   Result: You see the New Profile Group Field screen.
3. Select `Profile Field`from the **Field Type** drop down list.

   Result: You see the Profile Field options in the New Profile Group Field screen:
4. In the **Group Order** field, set the number of the line this field should be displayed in.

   Lower numbers are closer to the top of the screen.

   Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.
5. In the **Sub Order** field, set the number which defines where this field is displayed relative to other fields in its group.

   Lower numbers are closer to the left.
6. In the **DisplayName** field, type the name you want to give to the field.
7. From the **Profile Tag Name** drop down list, select the profile tag this field will be in.

   This list is populated from the profile tags defined on the ACS Configuration screen.
8. The **Permission Name** field displays the permission name for this field. It is used when configuring the user template in ACS.

If you want to set the permission name to the standard name, ensure the **Auto Populate Permission Name** check box is selected.

The standard format is:

`ServiceProvider-ProfileGroup-DisplayName`

If you want to set the permission name to something other than the standard name:

- Deselect the **Auto Populate Permission Name** check box,
- In the **Permission Name** field, enter the name for this profile group field.

9. Click **Save**.

Related topic

Profile Group Fields

Adding BPL fields

Follow these steps to add a BPL to a profile group.

Note: You will only be able to use this functionality if you have the Task Management license.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.

   On the **Profile Group Fields** tab, select the **Group** you want from the drop down list.

2. Click **New**.

   Result: You see the New Profile Group Field screen.

3. Select `Business Process Logic` from the **Field Type** drop down list.

   Result: You see the Business Process Logic options in the New Profile Group Field screen.

4. In the **Group Order** field, set the number of the line this field should be displayed in.

   Lower numbers are closer to the top of the screen.

   Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.

5. In the **Sub Order** field set the number which defines where this field is displayed relative to other fields in its group.

   Lower numbers are closer to the left.

6. From the **BPL** drop down list, select the BPL to include in the profile group.

   This list is populated from the BPL tasks defined in the Task Management screen. For more information about setting up BPL tasks, see Task Management.

   Tip: The **Permission Name** field is for reference only. It displays the permission name for this BPL which is used when configuring the User Template in ACS.

7. Click **Save**.

Editing a profile group field

Follow these steps to edit an existing profile group field or BPL for a profile group.

Note: The **Field Type**, **Profile Tag Name** and **Permission Name** fields are not editable.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Profile Group Fields** tab, select the **Group** you want to edit.
3. In the table, select the row to edit.
4. Click **Edit Field**.

   Result: You see the Edit Profile Group Field screen. The screen fields differ depending on whether you are changing a Business Process Logic or Profile Field:
5. Edit the **Group Order** and **Sub Order** for the profile group field.

   Tip: The combination of group and sub order determines how profile group fields are displayed on the Edit Subscriber screen.
6. If required, edit the profile group field details.
   - For BPLs, you can select a different BPL from the drop down list.
   - For profile tags, you can enter a new display name.
7. Click **Save**.

Deleting profile groups and fields

Follow these steps to delete an existing Profile Group or Profile Field.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Profile Group Fields** tab, select the **Group** you want from the drop down list.
3. To delete the group and all its associated fields, click **Delete Group**.
4. To delete a specific field from the group, in the table, select the row containing the field to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

   Result: The record is deleted. A confirmation prompt is displayed.
6. Click **OK**.

UBE Account Balancing

The UBE Account Balancing tab enables you to move wallets from one VWS domain to another. This may be used to:

- Redistribute wallets and buckets after a hardware upgrade or the addition of more Voucher and Wallet Servers
- Move wallets and buckets off a VWS that is being decommissioned

For more information about wallets, see Subscriber Accounts and Wallets.

For more information about domains, see Domains.

Topics:

Migration states

UBE Account Balancing buttons

UBE Account Balancing fields

Adding migrations

Editing migrations

Reviewing domain records

Viewing migration details

Saving unmigrated accounts to input file

Example exported report

Deleting subscriber account migrations

Migration states

This table describes the possible states a migration can have.

State	Row Color	Description
P	White	Pending
N	Light yellow	Priority (run Next regardless of insertion order)
H	White	On Hold (pending but marked to not run yet)
S	Light orange	Paused (Stopped by the user)
C	Orange	Canceled
F	Red	Failure (all or some wallets not moved successfully; they were either not on the source VWS VWS or did not have one of the specified wallet states)
M	Blue	Migrated
I	Yellow	Incomplete (Maximum Wallets reached before the end of the batch)
R	Green	Running

Tip: Highlighted migrations are shown in dark blue. Table text is always black.

UBE Account Balancing buttons

This table describes the function of each field.

Field	Description
Refresh	Refreshes the table with migrations of the states which correspond to the selected check boxes. The states for each check box are: • Complete: M, C, I and F • Running: R • Pending: N, P, H, S, I and F
Priority	Changes the state of a selected migration to the priority (N) state. **Tip:** Disabled if the selected migration has any of these states: N, C, R or M.
Restart	Changes the state of a selected migration to the pending (P) state. **Tip:** Disabled if the selected migration has any of these states: P, C, R or M.
Pause	Changes the state of a selected migration to the paused (S) state. **Tip:** Disabled if the selected migration is not in the Running (R) state. **Notes:** • After the Pause button is clicked, the system takes up to 5 seconds to react to the change. Any migrations started before the pause is recognized are completed. • If the selected migration is in the Paused (P) state, this button turns into the Hold button.
Hold	Changes the state of a selected migration to the On Hold (H) state. The Pause button turns into the Hold button if the selected migration is in the Paused (P) state.
Cancel	Changes the state of a selected migration to the canceled (C) state. A report on which wallets were migrated is compiled and saved. **Tip:** Disabled if the selected migration has any of these states C, R, M, F, S or I.
Report	Opens a Report screen displaying the report. For more information about what you can do with the Report screen, see Saving unmigrated accounts to input file. **Tip:** Disabled if there is no report for the selected migration.

UBE Account Balancing fields

This table describes the function of each field in the **UBE Account Balancing** tab and the New/Edit Migration screen.

Field	Description
Source Domain	The name of the VWS domain the wallets are being moved from. Can only be changed if state is P, N or H.
Target Domain	The name of the VWS domain the wallets are being moved to. Can only be changed if state is P, N or H.
Batch ID	The ID of the subscriber batch the wallets belong to. This field is required for moving subscriber accounts which were generated in a batch.
Start Date	The day the migration started. For second attempts or continuation when in Incomplete (I) state, this is reset to the latest start time. Shows blank if the migration has not been started.
Ed Date/Progress	If the migration is complete (states M or F), or interrupted (states C, I or S), this field shows the date the migration finished. If the migration has not started, this field is blank. If the migration is in progress (state R) this field shows the progress of the migration as a percentage of the wallets which have successfully been migrated.
State	The state of the migration. For more information about migration states, see Migration states.
Input File	Input filename. Shows blank if the migration has no input file. **Note:** This file is the same as Input File below.
Subscribers to migrate	Defines the criteria which will be used to determine which subscriber accounts will be moved. One of the radio buttons is selected. Can only be changed if state is P, N or H.
Range Start	If the subscriber range option is selected, this field defines the lowest subscriber account number in the range to move. Cannot be edited after it is first saved.
Range End	If the subscriber range option is selected, this field defines the highest subscriber account number in the range to move. Cannot be edited after it is first saved.

Field	Description
Account Batch	The ID of the batch of subscriber accounts to move. This field is populated by the **Subscriber Batch** tab. For more information about subscriber batches, see Subscriber Batch. This field can only be edited if: • State is P, N or H • the migration was not first saved with a range or input file
Input File	The file which lists the subscriber accounts to migrate. This field is displayed in the **UBE Account Balancing** tab as Input File. Cannot be edited after it is first saved.
Product Type	The product type of the wallets to migrate. This field is populated by the **Product Type** field. For details, see Subscriber Management - Product Type. This field can only be edited if: • State is P, N or H • The migration was not first saved with a range or input file.
Wallet States to migrate	Each selected wallet state indicates that the migration should include wallets which are in this state. If this option is selected, at least one check box must be selected. For more information about wallet states, see *VWS Technical Guide*. Can only be changed if state is P, N or H.
Maximum Wallets	The maximum number of wallet move requests to send in one set of requests. If this value is set to less than the number of wallets which need migrating, the migration will stop after this number of wallets and change to the Incomplete (I) state. Optional. If not set, not limit is applied. Can only be changed if state is P, N, H, I, F or S.
Throttle	The maximum number of wallet move requests to send to the VWS Voucher and Wallet Servers in one second. Optional. Value can be between 1 and 9999. **Note:** The actual maximum is the lowest of this number and the throttle parameter in the ccsDomainMigration configuration. For more information about ccsDomainMigration, see *CCS Technical Guide*. Can only be changed if state is P, N, H, I, F or S.

Field	Description
Save the remaining subscribers to a file	The filename of the file which stores the details of any subscriber account which is not successfully moved. **Tip:** This file can be used as an Input File for a rerun of the migration. Only enabled if state is P, N, H, I, F or S.

Adding migrations

Follow these steps to add a migration.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **UBE Account Balancing** tab, click **New**.

   Result: You see the New Account Balance Domain Migration screen.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see UBE Account Balancing fields.
4. You can check the number of wallets and subscribers on the source and target domains, using the **Check Accounts** button. For more information about how to use this feature, see Reviewing domain records.
5. When you have completed configuring the migration, click **Save**.

   Result: The Confirmation Dialog prompt shows the migration details. and asks for the confirmation.
6. Click **Confirm**.

   Results:

   - The migration record details are saved to the database, the migration is started, and the New Account Balance Domain Migration screen is closed.
   - If the migration is successful, the details in the SMF database are updated. After the screen data is refreshed (for example, by clicking **Refresh**), the migration is shown as having a Migrated (M) state.
   - If the migration has errors all changes are rolled back, and the migration is shown as having a Failure (F) state.

Related topic

UBE Account Balancing

Editing migrations

Follow these steps to edit an existing migration.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **UBE Account Balancing** tab, click **Edit**.

Result: You see the Edit Account Balance Domain Migration screen.

3. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see UBE Account Balancing fields.

4. You can check the number of wallets and subscribers on the source and target domains, using the **Check Accounts** button. For more information about how to use this feature, see Reviewing domain records.

5. When you have completed changing the details, click **Save**.

   Note: The Save button is not available if the migration has a migrated (M) state.

   Result: The Confirmation Dialog prompt shows the migration details and asks for confirmation to make the changes.

6. Click **Confirm**.

   Results:

   - The migration record changes are saved to the database, the migration is restarted, and the Edit Account Balance Domain Migration screen is closed.
   - If the migration is successful, the details in the SMF database are updated. After the screen data is refreshed (for example, by clicking **Refresh**), the migration is shown as having a Migrated (M) state.
   - If the migration has errors all changes are rolled back, and the migration is shown as having a Failure (F) state.

Related topic

UBE Account Balancing

Reviewing domain records

Follow these steps to review the wallets and subscribers on the source and target domains in a migration.

1. On the New Account Balance Domain Migration, or the Edit Account Balance Domain Migration screen, select the source and target UBE domains and click **Check Accounts**.

   Result: You will see the details in the Accounts Summary screen.

2. The **Source UBE Wallet Count** table shows the number of wallets in each state which are on the source Voucher and Wallet Server.

   The **Source UBE Subscriber Count** table shows the number of subscribers linked to wallets in the source Voucher and Wallet Server. The subscribers are grouped by product type.

   The **Target UBE Wallet Count** table shows the number of wallets in each state which are on the destination Voucher and Wallet Server.

   The **Target UBE Subscriber Count** table shows the number of subscribers linked to wallets in the target Voucher and Wallet Server. The subscribers are grouped by product type.

3. When you have finished reviewing the details, click **Close**.

   Result: The Accounts Summary screen will close and you will be returned to the New or Edit Account Balance Domain Migration screen.

Viewing migration details

Follow these steps to view the details of an existing migration.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **UBE Account Balancing** tab, click **Edit**.

   Result: You see the Edit Account Balance Domain Migration screen.
3. View the details of the record.

   For more information about the fields in this screen, see UBE Account Balancing fields.
4. When you have completed viewing the details, click **Cancel**.

   Result: The Edit Account Balance Domain Migration screen is closed without saving any changes.
5. With the migration still selected, click **Report**.

   Result: The Report screen appears showing the migration report.
6. To export the report, perform one of the following actions:
   - Enter the filename into the field
   - Click **Browse** and select a destination file.
7. Click **Save**.

   Result: The report will be exported to the specified file.

   Example: For an example of an exported report, see Example exported report.
8. When you have finished looking at the report, click **Close**.

   Result: The Report screen will close.

Saving unmigrated accounts to input file

Follow these steps to save a list of unmigrated account MSISDNs to a file. This file can then be used as an Input file for a rerun of the migration.

1. On the **UBE Account Balancing** tab, select the migration to save the file for, and click **Edit**.

   Result: The Edit Account Balance Domain Migration screen appears showing the migration details.
2. Specify the name of the file to write the report to. Perform one of the following actions:
   - Click **Select** and browse to the file to write the report to
   - Enter the name of the output file.
3. Click **Save**.

   Result: The details of the migration report are saved to the file specified in step 2.

   Example: This text shows an example of an export of unmigrated MSISDNs:

   971559101709

971559101701

971559101702

971559101703

971559101704

971559101705

971559101706

971559101707

971559101708

4. Click **Cancel**.

   Result: The Edit Account Balance Domain Migration screen closes.

Example exported report

This text shows an example of an exported report. It can be used as an input file to run another migration.

State: Migrated

Source UBE: 11

Target UBE: 88

Batch: 84

Allowed Wallet States: PDSFT

Migration Start: 20080610102746

Migration End: 20080610102813

Migrations Completed: 42/50 (84%)

Subscribers Not Migrated:

4416030026 Primary: Wrong state

4416030027 Primary: Wrong state

4416030028 Primary: Wrong state

4416030029 Primary: Wrong state

4416030030 Primary: Doesn't exist in source domain

4416030031 Primary: Doesn't exist in source domain

4416030032 Primary: Doesn't exist in source domain

4416030033 Primary: Doesn't exist in source domain

Shared wallet subscribers also migrated:

None

Wallet Id failed deletion on source UBE:

None

Deleting subscriber account migrations

Follow these steps to delete an existing subscriber account migration record.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **UBE Account Balancing** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **Yes** to delete the record from the database.

Related topic

UBE Account Balancing

2

Subscriber Management - Subscribers

This chapter explains the subscriber configuration screens.

This chapter contains the following topics.

Subscriber

Adding Subscribers

Editing Subscribers

Record Subscriber comments

Configure Subscriber Zones

Edit Wallets

Edit Wallet Balances

Change Wallet Balance Adjustment Limits

Merge Wallets

Reservations

View EDRs

Execute Business Process Logic

View Subscriber Promotions

Perform Credit Transfers

Subscriber

The **Subscriber** tab displays the subscriber accounts created for the selected service provider.

A subscriber account may take the form of a prepaid card or be assigned to a subscriber ID or CLI. The subscriber has a card printed with the calling card number, which is used when making a call. In the case of subscriber ID-based records, the wallet is set up to recognize a physical phone number. This enables any user of that line to access the wallet. Group wallets are created when multiple subscribers are established on a single wallet reference.

Topics:

About Auditing Changes to Subscriber Data

Component options summary

Finding subscribers

Black List

Deleting subscribers

About Auditing Changes to Subscriber Data

The EDR auditing feature enables you to monitor changes to the financial data held for subscribers. When EDR auditing is enabled, a user is forced to enter a reason for changes they make to financial data in a special **Change Reason** dialog box; for example, when editing a subscriber to:

- Update the subscriber's credit cards
- Update the subscriber's wallets
- End a reservation
- Reverse charges in the EDR Viewer

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the corresponding VWS EDR. You can view this information by displaying the EDR in the EDR Viewer.

The EDR auditing feature is enabled by the EDR auditing global configuration option. For more information, see the discussion on EDR auditing in Global Configuration.

Component options summary

This table lists all the available subscriber configuration options and their functionality.

Note: The options available to you will depend on how your system has been set up, and will be a subset of this list.

Option	Description
Details	Sets the service details for this subscriber. See Subscriber Details for set up information.
Call Barring	Use to add and maintain the barred/allowed numbers list that applies to a subscriber. See Call Barring for set up information.
Number Translation	Use to view and maintain the short codes that are mapped to specific termination numbers for a subscriber. See Number Translation for set up information.
Credit Card	Use to view and maintain the credit card details for a subscriber. See Credit Card for set up information.
Remote Access	Sets the subscriber's access to the remote access service. See Remote Access for set up information.

Option	Description
Friends and Family	Configures the list of Friends and Family or the Friends and Destination numbers for a subscriber. This screen enables you to: • View the discount prefix for the number, see how many changes have been made to the number listing and the most recent date of the change • Add or delete numbers from the Friends and Family or the Friends and Destination list See Friends and Family for set up information.
Closed User Groups	Use to view and modify the list of closed user groups (CUG) that the subscriber belongs to. See Adding closed user groups for set up information.
Balance Topup Rules	Use to view the active topup rules defined for the subscriber. The rules are used to allocate additional items, such as additional notifications, to specified balance types on a regular basis. See Balance Topup Rules for details.
Peer-to-Peer	Use to perform the subscriber's peer-to-peer credit transfers. See Perform Credit Transfers for details. **Notes:** • This configuration option may only be accessed through the Edit Subscriber screen. • You can only execute peer-to-peer credit transfers if you have purchased the license for this functionality and you have been allocated sufficient User privileges.
Service Bundle	Use to view and configure the subscriber's service bundle credit transfers. See Perform Credit Transfers for details. **Notes:** • This configuration option may only be accessed through the Edit Subscriber screen. • You can only execute service bundle credit transfers if you have purchased the license for this functionality and have been allocated sufficient user privileges.

Finding subscribers

Follow these steps to search for an existing subscriber.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.

2. On the **Subscriber** tab, enter the search strings to use to find the required subscriber. Enter the first few characters of the corresponding string in one of the following fields:
   - **Wallet Reference**
   - **Card Number**
   - **Subscriber ID**
   - **Customer**
3. **Tip:** If you enter characters in more than one field, the **Search** button will be disabled.
4. Specify whether to search for an exact match, or for a prefix match. Select:
   - **Exact Match** to search for the subscriber with the specified subscriber ID
   - **Prefix Match** to search for all subscribers with subscriber IDs that match the specified prefix
5. Click **Search**.

   The search returns a maximum of 100 rows. If the required subscriber is not displayed and more than 100 rows were returned, enter a longer search string and click **Search** again.

   Note: If a subscriber has more than one wallet then the search returns additional rows for the subscriber; one for each wallet. The wallet type is displayed next to the wallet reference number.

Black List

The Details option provides a **Blacklisted** check box, which lets you add or remove a subscriber from the black list.

By default subscribers are not blacklisted. However, a subscriber is automatically blacklisted if they fail, three times in succession, to recharge their wallet with a valid voucher number. The blacklisted subscriber remains active, however any future attempts at recharging with a voucher number will also require the matching scratch card serial number.

Deleting subscribers

Follow these steps to delete an existing subscriber.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Subscriber** tab, select the subscriber to delete.
3. Click **Delete**.

   Result: The Delete Confirmation prompt appears.
4. Click **OK**.

   Note: The record is deleted and the **Subscriber** tab is refreshed as if you had clicked **Search**. If the subscriber has both a primary and a secondary wallet, both wallets will be deleted.

Related topic

Subscriber

Adding Subscribers

All configuration options must be completed to finalize a new subscriber record, however the configuration can be saved at any point by clicking **Save**.

Note: When you save a new subscriber, you are presented with the New Wallet screen. You need to configure the wallet to finish configuring the new subscriber. See Wallets for details. After adding the wallet, the subscriber is saved. To fill in any of the options that you have not completed for the subscriber, you need to search for, then edit the subscriber.

Topics:

New subscriber options

Subscriber Details

Call Barring

Number Translation

Credit Card

Registering credit cards to subscribers

Remote Access

Friends and Family

Adding closed user groups

Balance Topup Rules

Wallets

New subscriber options

Here is a list of options available on the New Subscriber screen.

- Subscriber Details
- Call Barring
- Number Translation
- Credit Card
- Remote Access
- Friends and Family
- Adding closed user groups
- Balance Topup Rules

Subscriber Details

Follow these steps to configure basic details for a new subscriber or edit the details of a current subscriber.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Subscriber** tab, to:
   - Create a new subscriber, click **New**.
   - Edit a subscriber, select the subscriber from the table and click **Edit**.

   Result: You see the New Subscriber screen or the Edit Subscriber screen, with the Subscriber, **Details** option selected.
3. In the **Card Number** field, enter the card number for this subscriber. This field is required.

   Tip: Most commonly, this is the same as the subscriber ID.
4. In the **Subscriber ID** field, enter the Calling Line Identifier (CLI) for this subscriber. This identifies the line which the call is being placed from. When a call is made using CCS, the system determines which wallet to charge based on the subscriber ID of the caller. If the subscriber ID is not recognized, the card number and PIN is used to determine the subscriber and validity of the call.

   The subscriber ID is mandatory.
5. In the **Description** field, enter a description for the new subscriber.
6. To add a PIN for this subscriber, select the **Is Defined** PIN check box. This will enable the **PIN** and **Confirm PIN** fields for entry.
7. Skip this step if a PIN is not required for this subscriber.

   If a PIN is required, configure the PIN by doing the following:
   - In the **PIN** field, enter the PIN number.
   - In the **Confirm PIN** field, re-enter the same PIN number. The two fields must match before the new subscriber record can be saved.

   To use the PIN, the **eserv.config** parameter `AccountLength` must be set to the required length for card numbers, or a large value for variable length card numbers, for example 50, (default = 10).

   For more information, see the *CCS Technical Guide*.

   When using the PIN option to recharge vouchers, the length of the Wallet Reference number must equal the `AccountLength` parameter (that is, variable length wallet references cannot be used).

   A PIN is also used in credit transfers (service bundle or peer-to-peer) that are configured to require a PIN on execution.

   Tip: A PIN is recommended for security reasons.
8. From the **Language** drop down box, select the language to use for announcements for this subscriber.

   The list displays all languages available to the current service provider. Languages are configured on the Tools screen. To create a new language or give a service provider permission to use a language, see *ACS User's Guide*.
9. If the subscriber should be allowed to set the presentation restricted indicator in the outgoing connect message for all services other than CCS_ROAM, select the **Subscriber ID Restriction** check box.

10. If this subscriber should not be able to receive incoming calls while roaming, select the **Disable Incoming Calls When Roaming** check box.
11. If this subscriber should be:
    - Able to use the service, ensure the **Blacklisted** check box is not selected.
    - Stopped from using the service, select the **Blacklisted** check box.

    For more information about blacklisted subscribers, see Black List.
12. If the subscriber should not be sent SMS notifications, select the **Disable SMS Notifications** check box.
13. Select another option to configure for this subscriber or click **Save**.

    Note: When you save a new subscriber, you will see the New Wallet screen. See Wallets for more information.

Related topic

Adding Subscribers

Call Barring

This manages allowed/ barred lists for service providers.

Allowed/barred lists can also be configured at the following levels:

- System-wide
- Service provider (see the Barred List tab)
- Product type (see Call Barring option).

Follow these steps to add or edit call barring configuration details for a subscriber.

1. In the New or the Edit Subscriber screen, select the Profile, Call Barring option from the left hand menu.

   Result: You see the Call Barring configuration option fields.
2. In the **Allowed/Barred List** section, select whether the listed numbers will be allowed or barred from the **List Type** drop down list.

   Tip: Depending on the list type, all numbers in the list are allowed, or all numbers are barred for this subscriber. It is not possible to have some allowed and some barred numbers in the list.
3. If you want the service to ignore the allowed/barred list for this subscriber, select the **Ignore** check box.
4. To add a number to the list, enter the number in the **New Number** field and click **Add.**
5. To delete a number from the list, select it in the **Number List** and click **Delete.**
6. Repeat steps 4 and 5 as required to complete the number list.
7. Select another option to configure for this subscriber or click **Save**.

   Note: When you save a new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Number Translation

Follow these steps to add the number translation details to a new subscriber.

Number translation can also be configured at the following levels:

- System-wide
- Service provider
- Product type.

1. In the New Subscriber screen, select the Profile, Number Translation option from the left hand menu.

   Result: You see the Number Translation configuration option fields.

2. In the **Short Codes** section, edit the number list.
   - To add a number to the list:
     - In the **In** field, enter the service short code to translate
     - In the **Out** field, enter the termination number to translate the short service code to
     - Click **Add**
   - To delete a number from the list:
     - Select the number in the **Number list**
     - Click **Delete**
3. Repeat step 2 until the number list contains all the required numbers.
4. Select another option to configure for this subscriber or click **Save**.

Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Credit Card

Follow these steps to configure and update credit card details for a subscriber.

1. In the New or the Edit Subscriber screen, select the Profile, Credit Card option from the left hand menu.

   The Credit Card table displays, listing the details of the subscriber's credit cards.

2. (Optional) Create a new credit card registered to the subscriber by performing the following steps:
   a. Click **New**. The New Credit Card dialog displays.
   b. Enter the credit card details in the credit card fields, and click **Save**. For information about credit card fields, see New Credit Card fields.

   The credit card is added to the **Credit Card** table.

3. If you want to:

- Register an existing credit card to the subscriber, click **Register** and then follow the credit card registration procedure. See Registering credit cards to subscribers for details
- Confirm the credit card to the subscriber, select the credit card in the table and click **Confirm**.
- Delete a credit card, select the credit card in the table and click **Delete**.

4. If you want to deregister a credit card from the subscriber:
   a. Select the credit card in the table and click **Deregister**. The Deregister Credit Card confirmation panel displays.
   b. Click **Deregister**.
5. If you want to freeze a credit card:
   a. Select the credit card in the table and click **Freeze**. The Freeze Credit Card confirmation panel displays.
   b. Click **Freeze**.
6. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
7. Select another option to configure for this subscriber or click **Save**.

   Note: When you save a new subscriber, the New Wallet screen displays. For more information, see Wallets.

Related topic

Adding Subscribers

Registering credit cards to subscribers

Follow these steps to register a credit card to a subscriber.

1. Search for the credit card to register. See Searching for credit cards.
2. Select the credit card to register.
3. Click **Register**.

   Note: The **Register** button is disabled if the subscriber already has the allowed number of credit card registrations.
4. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Related topic

Adding Subscribers

Remote Access

Follow these steps to add remote access to a new subscriber.

1. In the New Subscriber screen, select the Profile, Remote Access option from the left hand menu.

Result: You see the Remote Access configuration option.

2. If you want the subscriber to have remote access, select the **Remote Access Allowed** check box.

   Note: The subscriber will only be able to use remote access IVR if their product type also has the Remote Access check box selected. For details, see Remote Access.

3. Select another option to configure for this subscriber or click **Save**.

   Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Friends and Family

Follow these steps to add Friends and Family configuration details to a new subscriber.

1. In the New Subscriber screen, select the Profile, Friends and Family option from the left hand menu.

   Result: You will see the Friends and Family configuration option.

2. From the **Active Service** options, select the service that should be active for the subscriber.
3. In the **Friends & Destination Settings** frame, select the discount prefix for Friends and Destination from the **Discount Prefix** drop down list.
4. In the **Change Count** field, enter the total number of change counts for the subscriber.
5. From the **Change date** drop down list, select the day, month, year, hour and minute of the most recent change to the subscriber.
6. From the **Friends & Family Settings** frame, enter the number of times the subscriber has been changed in the **Change count** field.
7. From the **Change date:** drop down list, select the day, month, year, hour and minute of the most recent change to the subscriber.
8. In the **Friends & Family Numbers** frame, edit the number list. To:
   - Add to the list, enter a required number in the **New Number** field and click **Add**.
   - Delete from the list, in the **Number List**, select the number and click **Delete**.
9. Select another option to configure for this subscriber or click **Save**.

   Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Adding closed user groups

Follow these steps to update the closed user groups (CUG) a subscriber belongs to.

Warning: This functionality is only available where rating management for the subscriber is either handled by the VWS, or a third-party domain that supports closed user groups.

1. In the New or the Edit Subscriber screen, select the Profile, **Closed User Groups** option from the left hand menu.

   Result: You see the **Closed User Groups** configuration options.

2. Update the **Closed User Group Membership List** for the subscriber as required. To:

   - Add a closed user group,
     - Select the CUG you want from the **Available Closed User Groups** drop down list.
     - Click **Add**.

     Result: The closed user group name appears in the list.
   - Remove a CUG from the list,
     - Select it in the Closed User Group Membership List
     - Click **Delete**.

     Result: The closed user group name is moved from the membership list to the available list.

3. Select another option to configure for this subscriber or click **Save**.

   Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Note: You can also assign CUG membership on the **Closed User Group** tab of the Subscriber Management screen. For more information, see Editing closed user groups.

Related topic

Adding Subscribers

Balance Topup Rules

The Balance Topup Rules option lets you view the active topup rules defined for the subscriber, and when they were last activated. The rules are used to allocate additional items, such as additional notifications, to specified balance types on a regular basis. For details on creating and activating balance topup rules, see *CCS Technical Guide*.

Follow these steps to view the active balance topup rules for a subscriber.

1. In the New or the Edit Subscriber screen, select the **Balance Topup Rules** option from the left hand menu.

   Result: You see the **Balance Topup Rules** configuration option.

2. Select another option to configure for this subscriber or click **Save**.

   Note: When you save the new subscriber, you will see the New Wallet screen. Refer to Wallets to finish configuring the new subscriber.

Related topic

Adding Subscribers

Wallets

The New Wallet screen appears when you first save the configuration for a new subscriber, or when you click **New Wallet** in the Edit Subscriber screen. The new wallet can be a:

- New private wallet
- Link to a shared wallet

Related topic

Adding Subscribers

Distributed wallets

When you add a new wallet for a subscriber you can specify that the wallet balances should be distributed across separate charging and tracking domains.

For a distributed wallet the charging domain:

- Will hold chargeable balances
- Can be either a VWS or a Diameter domain type

The tracking domain:

- Will hold fraud and expenditure balances
- Must be a VWS domain type

Wallet rules

The following rules apply when creating a new wallet for a subscriber:

1. By default, a new wallet will be created on a VWS charging domain and not distributed across a charging domain and a tracking domain.
2. You can only specify a charging and a tracking domain for a subscriber's wallet when you add the new wallet. If you add a non-distributed wallet for subscriber (that is, specify a charging domain only for the wallet), then you will not be able to edit the wallet later to add a tracking domain.
3. If you specify a VWS domain type for the charging domain then you must specify the same VWS instance for the tracking domain.
4. Only balances held on a VWS domain type will be accessible through the Edit Subscriber screen.
5. If a subscriber's wallet is distributed across an external charging domain and a VWS tracking domain, then you will only be able to access fraud and expenditure balances in the Edit Subscriber screen. That is, you will only be able to access balances where the balance category is set to 'Expenditure Balance' or 'Fraud Balance'.

New Wallet fields

This table describes the function of each field.

Field	Description
Link To Existing Wallet	Selecting this option indicates that the wallet is shared. This field will be disabled for non-VWS charging domains.
Charging Domain	The domain to use for chargeable balance types. The drop down list will display all available domains. This field will be disabled if **Link To Existing Wallet** is selected. **Note:** For distributed wallets the system will support either Diameter or VWS charging domains.
Tracking Domain	The domain for balance types used for tracking promotions and fraud. The drop down list will display all available VWS domains. **Note:** A VWS must be used.
Wallet Reference	The wallet reference for one of: • The wallet on a VWS or external charging domain • For a shared wallet on a VWS charging domain If this field is left blank, then the wallet reference will be generated automatically. **Note:** This field becomes enabled if **Link to Existing Wallet** is selected or if a non VWS charging domain is selected.
Product Type	The product type associated with the wallet. For more information on product types, see Product Type.
Display Currency	The currency used to display the value in the **Minimum Credit** field.
Wallet Currency	The currency used to hold monetary values in this wallet.
Customer	The customer who has access to this wallet.
Limit Type	Indicates if the limit type associated with this wallet is: • Prepaid • Single Use • Postpaid • Limited Postpaid
Minimum Credit	For limited postpaid wallets, this is the minimum credit value for the wallet.
Maximum Concurrent Accesses	The total number of accesses that can be supported against the wallet at any one time. **Note:** Setting this field to more than 1 may change the way charges are applied to balances. For more information about how this parameter affects balance charges, see `alwaysUsePreferred` parameter in *CCS Technical Guide*.

Adding a third party domain wallet

Follow these steps to add a new non distributed wallet to a subscriber using a third party domain.

See New Wallet fieldsNew Wallet fields for a description of the fields on the New Wallet screen.

1. Ensure **Link To Existing Wallet** is not selected.
2. From the **Charging Domain** drop down list, select the third party domain for the wallet. This field is populated by the **Domain** tab. For more information, see Domain.
3. From the **Tracking Domain** drop down list, ensure `None` is selected.
4. Enter the identifier for the wallet in the **Wallet Reference** field. If you leave this field blank then the external wallet reference is auto-generated using the value of the wallet ID.
5. Click **OK** to save the new Wallet.

Adding a distributed wallet

Follow these steps to add a new distributed wallet to a subscriber.

See New Wallet fields for a description of the fields on the New Wallet screen.

1. In the New Wallet screen, ensure **Link To Existing Wallet** is not selected.
2. From the **Charging Domain** drop down list, select the domain to use for chargeable balances.

   This field is populated by the **Domain** tab. For more information, see Domain.
3. From the **Tracking Domain** drop down list, select the VWS domain to use for expense and fraud balances.
4. If you selected a third party charging domain then in the **Wallet Reference** field type the external wallet reference.
5. From the drop down list, select the **Product Type** that will be associated with this wallet.

   This field is populated by the **Product Type** tab. For more information, see Subscriber Management - Product Type.
6. From the **Display Currency** drop down list, select the currency that the **Minimum Credit** field will be displayed in.
7. From the **Wallet Currency** drop down list, select the currency that will be used for monetary values for this wallet.

   All available currencies are displayed in this list.
8. If required, select the **Customer** from the drop down list who will have access to this wallet.

   This field is populated by the **Customer** tab. For more information, see Customer.

   Note: This field will be disabled if a non VWS charging domain is selected.
9. Select the **Limit Type** from the drop down list that will be used for this wallet.

Note: This field will be disabled if a non VWS charging domain is selected.

10. If you selected `Limited Postpaid` for the limit type, enter the minimum credit value for this Wallet in the **Minimum Credit** field.

    Note: This field will be disabled if a non VWS charging domain is selected.

11. In the **Maximum Concurrent Accesses** field, enter the total number of accesses that can be supported against the wallet at any one time.

    Note: This field will be disabled if a non VWS charging domain is selected.

12. Click **OK** to save the new wallet.

Adding a linked wallet

Follow these steps to add a new link to an existing wallet for a subscriber.

See New Wallet fields for a description of the fields on the New Wallet screen.

1. In the New Wallet screen, select **Link To Existing Wallet**.
2. Enter the identifier for the shared wallet in the **Wallet Reference** field.

   You must enter an existing wallet ID.

3. If this is a distributed wallet, select the **Tracking Domain** from the drop down list of available VWS domains.
4. Select the **Product Type** from the drop down list that will be associated with this wallet.

   This field is populated by the **Product Type** tab. For more information, see Subscriber Management - Product Type.

5. From the drop down list, select the **Display Currency** to use to display the minimum credit for the wallet.
6. Click **OK** to save the new linked wallet.

Editing Subscribers

The Edit Subscriber screen allows you to edit subscriber configuration and profile configuration options.

From this screen you can also:

- Record Subscriber comments
- Configure Subscriber Zones
- Edit Wallets
- Edit Wallet Balances
- Change Wallet Balance Adjustment Limits
- Merge Wallets
- Reservations
- View EDRs
- Execute Business Process Logic
- View Subscriber Promotions

- Perform Credit Transfers

If the NCC EDR auditing feature is enabled, and you update the financial data for a subscriber; for example, by updating their wallets, then you will be required to record the reason for the change when you save the subscriber record. For more information, see About Auditing Changes to Subscriber Data.

Topics:

Edit subscriber screen layout

Reverting unsaved changes

Subscriber details fields

Editing subscriber configuration

Editing configuration options

Reverting subscriber edits

Edit subscriber screen layout

The configuration and layout for the Edit Subscriber screen is defined in the Subscriber Profile Manager (SPM). When you open the Edit Subscriber screen, the fields and options you see depend on the configuration defined in the SPM for the subscriber's product type and service provider (see following screen example). This means that you may see one of the following:

- The default configuration for the Edit Subscriber screen containing all the fields and options available as a standard
- A customized Edit Subscriber screen containing a subset of the standard fields and options, plus any subscriber profile groups, fields and zones that have been configured specifically for you. The labels given to the fields and options may also be different from the default labels

You see the available options listed in the menu on the left hand side of the screen. To view or edit the fields for a particular option, select the option in the list.

Note: For information on configuring the Edit Subscriber screen, refer to Subscriber Configuration.

Reverting unsaved changes

You can revert any unsaved changes to a subscriber's configuration by clicking **Revert**. The data will revert to the most recently saved version of the subscriber's configuration.

For details see Reverting subscriber edits.

Subscriber details fields

This table describes the function of the standard subscriber details fields that may be available in the Edit Subscriber screen.

Note: Some of these fields may have been given different labels in your screens depending on how the Edit Subscriber screen has been configured.

Field	Description
Card Number	Specifies the card number for the subscriber.
Subscriber ID	The Calling Line Identifier (CLI) for this subscriber. This identifies the line that the call is being placed from. When a call is made, the system determines which wallet to charge based on the subscriber ID of the caller.
Description	A description for this subscriber.
Is Defined	Either removes a subscriber's PIN (unselected), or enables adding or editing a subscriber's PIN (selected)
PIN	Sets the subscriber's PIN (Is Defined must be selected).
Confirm PIN	Confirmation of the subscriber's PIN (Is Defined must be selected).
Language	Sets the language to use for announcements for this subscriber.
Subscriber ID Restricted	Sets whether or not the subscriber may set the presentation restricted indicator in the outgoing connect message for services. For further information refer to *CCS User's Guide*.
Disable Incoming Calls When Roaming	Sets whether or not the subscriber may receive incoming calls while roaming.
Blacklisted	Sets whether or not the subscriber may use the service. When selected, the service will be disabled. For more information about blacklisted subscribers, see Adding Subscribers.
Disable SMS Notifications	Sets whether or not the subscriber may receive SMS notifications.
Subscriber Information	Core information about the subscriber. For information purposes only.

Editing subscriber configuration

Follow these steps to edit the configuration for an existing subscriber.

Note: You can also access the Edit Subscriber screen and edit subscriber configuration from the CCP Dashboard. For details, refer to *Customer Care Portal User's Guide*.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Subscriber** tab, search for the subscriber to edit. For details see Finding subscribers.
3. Select the row in the search results for the subscriber to edit.

   Note: If the subscriber has both a primary and a secondary wallet, there will be a row in the search results for each wallet. The wallet type is displayed next to the wallet reference number. Select the row for the wallet type to edit.
4. Click **Edit**.

Result: You see the Edit Subscriber screen with the wallet type indicated in the screen title bar.

5. Edit the subscriber details fields as required. See Editing configuration options.
6. Edit the subscriber profile options as described in Adding Subscribers.
7. Edit the wallets for the subscriber as required. See Edit Wallets.
8. Execute business process logic actions as required. See Execute Business Process Logic.
9. Perform credit transfers as required. See Perform Credit Transfers.
10. Click **Save**.
11. If EDR auditing is enabled and you have changed the financial status of the subscriber, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

    See About Auditing Changes to Subscriber Data for more information.

Related topic

Editing Subscribers

Editing configuration options

Follow these steps to edit the configuration options for a subscriber account.

1. In the Edit Subscriber screen, select the option from the left hand menu that holds the field to edit.
2. Enter the new details as required.
3. Repeat steps 1 and 2 for all the fields to edit.
4. When you have completed your edits, click **Save**.

Reverting subscriber edits

Follow these steps to revert unsaved changes to the subscriber configuration.

1. In the Edit Subscriber screen, click **Revert**.

   Result: Any unsaved changes to the subscriber configuration will be reversed and the subscriber will be redisplayed using the original data.

Record Subscriber comments

The **Comments** panel, available from the Edit Subscriber screen, allows you to add notes about the subscriber's account. You can add, edit and delete comments in the panel.

Topics:

User access

Adding a comment

Editing a comment

Deleting a comment

User access

You can access comments in the Edit Subscriber screen provided you have been given sufficient privileges.

This table describes the privileges for comments.

Privilege	Description
Read/Only	The Comments panel will be visible through the screens, but no buttons will be available and you will not be able to edit, create, or delete comments.
Read/Modify	The Comments panel will be visible through the screens, and the **Add** and **Edit** buttons will be available. You will be able to create and edit your own comments, but you will not be able to edit the comments of other users.
Create/Delete	The Comments panel will be visible through the screens, and the **Add**, **Edit** and **Delete** buttons will be available. You will be able to create, edit and remove any existing comments.

Note: Access permissions are managed through the user templates defined in the Service Management System User Management screen. For information on creating and maintaining user templates, see *SMS User's Guide*.

Adding a comment

Follow these steps to add a comment to a Subscriber record.

1. On the left hand panel in the Edit Subscriber screen, select the option containing the Comments panel.
2. Click **Add**.

   Result: You see the Add Comment screen.
3. In the **Comment Text** field type in your comment. The comment can be up to 50 characters long.
4. Click **Save**.

   Result: You are returned to the Edit Subscriber screen

Related topic

Record Subscriber comments

Editing a comment

Follow these steps to edit a comment on a subscriber record.

1. On the left hand panel in the Edit Subscriber screen, select the option containing the **Comments** panel.
2. Click **Edit**.

3. **Result:** You see the Edit Comment screen.
4. Modify the comment in the **Comment Text** field, as required..
5. Click **Save**.

   Result: You are returned to the Edit Subscriber screen

Related topic

Record Subscriber comments

Deleting a comment

Follow these steps to delete a comment from a subscriber record.

1. On the left hand panel in the Edit Subscriber screen, select the option containing the **Comments** panel.
2. Click **Delete**.

   Result: You see the Delete Confirmation screen for the comment.
3. Click **Yes**.

   Result: The comment is deleted and you are returned to the Edit Subscriber screen.

Related topic

Record Subscriber comments

Configure Subscriber Zones

Zones provide the facility to customize the services provided to the subscriber depending on their location. For example, a home zone could be defined where the subscriber may obtain cheaper calls.

A subscriber may have up to nine zones. Each zone can be configured to include a group of up to five rectangular and circular shapes. The location and area covered by each shape is determined by its coordinates (defined in latitude and longitude format). If required, the shapes may overlap.

Note: This functionality is only operational if the NCC Location Capabilities Pack (LCP) package is installed.

Topics:

User access

Adding a new zone shape

Editing a zone shape

Deleting a zone shape

User access

You can access zones in the Edit Subscriber screen provided you have been given sufficient privileges.

This table describes the privileges that may be assigned to zone.

Privilege	Description
Read/Only	The zone will be visible through the screens, but you will not be able to edit, create, or delete it.
Read/Modify	The zone will be visible through the screens, and you will be able to edit it, but you will not be able to create or delete it. This means that you will be able to add, edit and delete shapes for the zone. However, if there is only one shape defined for the zone you will not be able to delete it because this would also delete the zone itself.
Create/Delete	The zone will be visible to the user through the screens, and you will be able to add, edit, and delete shapes for it even if there is only one shape defined for the zone. If you delete the only remaining zone shape, then the zone's profile tag will also be removed from the subscriber's profile.

Note: Access permissions are managed through the user templates defined in the Service Management System User Management screen. For information on creating and maintaining user templates, see *Service Management System User's Guide*.

Adding a new zone shape

Follow these steps to add a new shape to a zone.

1. In the Edit Subscriber screen, select the option that holds the zone to add a shape to.
2. In the group for the zone, click **New**.

   Result: You see the New Zone screen.
3. Select the option for the zone shape, select one of:
   - Circular Shapes
   - Rectangular Shapes
4. If you are specifying a circular zone shape, in the boxes enter the coordinates for the center of the circle and its radius.
   - **X (Deg):** The longitude coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees.
   - **Y (Deg):** The Latitude coordinate. Restricted to between -90.00000 and 90.0000 degrees.
   - **R (Kms):** The radius. Restricted to between 0.0000000 and 99999999.9999999 kilometers.
5. If you are specifying a rectangular zone shape, enter the coordinates for the top left and bottom right corners of the rectangle.

   Top-Left Corner:
   - **X (Deg):** The longitude west coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees and must not equal the value for the longitude east coordinate.
   - **Y (Deg:** The latitude north coordinate. Restricted to between -90.00000 and 90.0000 degrees and must be a higher number than the latitude south coordinate.

Bottom-Right Corner:

- **X (Deg):** The longitude east coordinate. Restricted to between -179.99999 (W) and 180.00000 (E) degrees and must not equal the value for the longitude west coordinate.
- **Y (Deg:** The latitude south coordinate. Restricted to between -90.00000 and 90.0000 degrees and must be a lower number than the latitude north coordinate.

6. Click **Save**.

Related topic

Configure Subscriber Zones

Editing a zone shape

Follow these steps to edit a Zone shape.

1. In the Edit Subscriber screen, select the option where the zone to edit is defined.
2. In the zone group select the shape to edit and click **Edit**.

   Result: You see the Edit Zone screen.
3. Edit the shape definition as described in Adding a new zone shape.
4. Click **Save**.

Deleting a zone shape

Follow these steps to delete a Zone shape.

1. In the Edit Subscriber screen, select the option where the zone shape to delete is defined.
2. In the zone group select the shape to delete and click **Delete**.

   Result: The zone shape is deleted.

Edit Wallets

The wallet information available in the Edit Subscriber screen will depend on the configuration defined for the product type and service provider for the subscriber (see following screen examples). This means that you may see one of the following:

- The default wallet configuration where all the standard wallet information fields are displayed under a single Wallet option.
- The Edit Subscriber screen may have been customized to contain a subset of the standard wallet information fields. This information may be available under a single option listed in the panel on the left hand side of the screen, or it may be split over more than one option. The labels given to the fields and options may also be different.

You see the available options listed in the menu on the left hand side of the screen. To view or edit the fields for a particular option, select the option in the list.

If EDR auditing is enabled in NCC, and you update the wallets for a subscriber, then you will be required to record the reason for the change in a special **Change Reason**

dialog that displays when you save the subscriber record. For more information, see About Auditing Changes to Subscriber Data.

Default wallet configuration

The default configuration for the Edit Subscriber screen contains the following categories of information and fields for subscribers' wallets. Depending on how your screens have been configured, you will be able to edit some or all of this data:

- Wallet information
- Wallet expiry details
- Wallet history
- Wallet balances
- Product type
- Wallet state
- Customer

Wallet type

The Edit Subscriber screen lets you look at the wallet details for the primary and secondary wallets. In a standard installation the primary and the secondary wallets appear on separate tabs in the Edit Subscriber screen. You can select the wallet by selecting its tab.

If the CCP is enabled on your system then you will only be able to access either the primary or the secondary wallet from the Edit Subscriber screen, but not both. The wallet type will:

- Depend on which row you selected in the subscriber search results table
- Be clearly indicated in the Edit Subscriber screen title

Wallet field groups

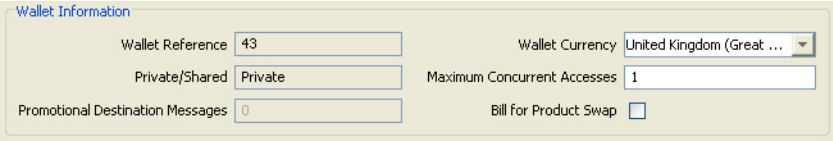
This table describes the function of the standard groups of fields that may be available with a wallet in the Edit Subscriber screen. Each group contains a standard set of fields, some of which may be editable.

Note: This table shows the default labels given to the information groups. These labels may be different in your screens depending on how the Edit Subscriber screen has been configured.

Group Label	Description
Balance Types panel	A panel showing the available wallet balances. For details, see Edit Wallet Balances.
Wallet Information	Core information about the wallet. For details, see Editing wallet information.
Product Type, Wallet State, and Customer fields	Wallet attributes. For details, see Product Type, Wallet State and Customer fields.
Wallet Expiry Details	Describes wallet expiry date (if any). For details, see Setting wallet expiry dates.
Wallet History	For information purposes only. Provides details about the wallet history.

Wallet Information group

Here is an example **Wallet Information** group.



Related topic

Edit Wallets

Editing wallet information

Follow these steps to edit the details in the Wallet Information group.

Warning: Although the names of the fields in the group remain the same, the group name will depend on how the Edit Subscriber screen has been configured.

1. From the left hand menu in the Edit Subscriber screen, select the option containing the Wallet Information group of fields.
2. In the Wallet Information panel select a different **Wallet Currency** from the drop down list, if required.

   This defines the currency used for monetary values for this Wallet.
3. If required, enter a new number for the **Maximum Concurrent Accesses** that can be supported against the subscriber at any one time.
4. If you have changed the subscriber's product type and you want to charge for this change then select the **Bill for Product Swap** check box.

   Tip: This charge is made when the current subscriber edits are saved. The next time you edit this subscriber this check box will have been cleared.
5. If you have completed your subscriber edits, click **Save**.
6. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Product Type, Wallet State and Customer fields

This table describes the function of each field.

Field	Description
Product Type	The product type which applies when this subscriber uses this wallet.
Wallet State	The state the current wallet is in. A wallet's state controls what features of the service a wallet can use, and reflects where in the wallet life cycle the wallet is. For more information about the wallet life cycle, see Wallet lifecycle.

Field	Description
Customer	The customer the wallet is associated with. For more information about customers, see Customer.

Activating a wallet

Follow these steps to set a wallet state to active.

1. From the left hand menu in the Edit Subscriber screen, select the option containing the **Wallet State** field.
2. From the **Wallet State** drop down list, select `Active`.
3. Click **Save**.

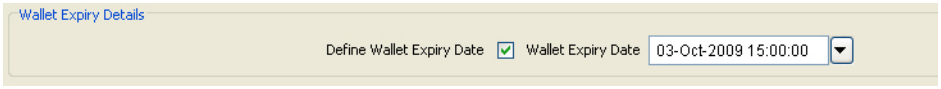
   Result: The subscriber record will be saved and the wallet state will be set to active. Any wallet activation promotions which have been configured for the subscriber or product type will be applied.

   Note: If a wallet activation promotion has been configured for a balance type that exceeds the maximum balance value defined for the balance type and the maximum balance policy is:

   - Limit additional credits, the wallet state will be set to active and the balance will be set to the maximum balance value.
   - Reject credits over, the wallet state and wallet balances will not be updated.
4. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Wallet Expiry Details group

Here is an example of the Wallet Expiry Details group fields.



Setting wallet expiry dates

Follow these steps to set the expiry date for a wallet.

1. From the left hand menu in the Edit Subscriber screen, select the option containing the Wallet Expiry Details group of fields.
2. In the Wallet Expiry Details group ensure **Define Wallet Expiry Date** is selected.
3. Select the **Wallet Expiry Date** from the drop down window.

   For more information about setting dates, see Time and Date panels.
4. If you have completed editing the subscriber, click **Save**.
5. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Edit Wallet Balances

You can view and edit balances for the wallets on the CCS VWS domain.

Note: If the wallet is on a third party domain then you will not be able to access balance type information in the Edit Subscriber screen.

If EDR auditing is enabled in NCC, and you update the wallet balances for a subscriber, then you will be required to record the reason for the change in a special **Change Reason** dialog that displays when you save the subscriber record. For more information, see About Auditing Changes to Subscriber Data.

For each balance type, you can specify:

- A set of bucket values and expiry dates
- Offset dates for bucket balances
- The limit type
- The minimum credit (only available on general cash balances)
- The display currency (not valid for non-cash balances such as time or notifications).

Bucket values are used to update balances. When you add a new bucket for a balance type, the bucket value is added to its current balance. When you edit a bucket value, the balance is changed to the new value.

Bucket expiry dates are used to define when the bucket balance will expire. When a bucket expiry date is reached, its balance is subtracted from the current balance value of the balance type.

Note: For time balance types, you specify bucket values in seconds. The value is shown on screen in both minutes and seconds. This functionality is only available if you have the appropriate license.

Topics:

Distributed wallet balances

Maximum balance values

Offset dates

Changing the display currency

Displaying balances by category

Adding a new balance

Adding a new bucket balance

Editing wallet balance details

Distributed wallet balances

If the wallet has been distributed across separate charging and tracking domains, then you may not be able to edit all wallet balances through the Edit Subscriber screen. If the wallet has been configured to use:

- A VWS domain for charging and tracking, you will be able to view and edit all wallet balances
- A third party charging domain and no tracking domain, you will not be able for view or edit any wallet balances
- A third party charging domain and a VWS tracking domain, you will only be able to view or edit expense and fraud balances

Maximum balance values

You can set a maximum value for prepaid balance types. If set, the total value held in the wallet for the balance type may not be updated to exceed the defined maximum value.

Maximum values are configured on the **Balance Types** tab in the wallet management screen. For details, see Balance Types.

Offset dates

You can specify an offset date for a bucket balance which defines a future date from which the bucket balance will become available. You can specify offset dates for these balance type categories:

- Chargeable
- Cross balance discount

Changing the display currency

Follow these steps to change the currency used to display balance values.

1. On the left hand panel in the Edit Subscriber screen, select the Wallets option, containing the Balance Type area.
2. Select a different display currency from the drop down list.

   Result: The Total Value column in the **Balance Type** table will be re-displayed using the currently selected display currency.

Displaying balances by category

Follow these steps to display a selected balance category in the Balance Types panel.

1. On the left hand panel in the Edit Subscriber screen, select the option containing the Balance Types panel.
2. Select the Balance Category you want to display from the drop down list.

   Result: The Balance Types grid is redisplayed showing only the balances for the selected balance category.

Adding a new balance

Follow these steps to add a new balance to a wallet.

Warning: Once you have added a wallet balance and saved the subscriber record you will not be able to delete the balance.

1. On the left hand panel in the Edit Subscriber screen, select the option containing the Balance Types panel.
2. Click **Add Balance**.

   Result: You see the Add Balance for Subscriber screen.
3. Select the **Balance Type** to add from the drop down list.

   Note: You will only be able to choose a balance type that has not been added already.
4. In the **Value** field, enter the current value for the balance.
5. To set an expiry date for the balance:
   - Select the **Define Bucket Expiry Date** check box
   - Select the **Expiry Date** from the drop down window

   For details on selecting a date, see Time and Date panels.
6. Click **OK**.

   You are returned to the Edit Subscriber screen.

   Warning: The changes to the wallet balances will be saved only when you save the subscriber record.

Adding a new bucket balance

Follow these steps to add a new bucket for a balance type.

1. In the details screen for the selected balance type, click **New**.

   Result: You see the New Bucket screen for the balance type.
2. In the **Value** field, type the new balance.

   Note: If a maximum value has been specified for the balance type then you must enter a value that will not cause the total value for the balance type to exceed the maximum set.
3. To specify an expiry date for the new bucket, check the **Define Bucket Expiry Date** field.

   Result: The **Expiry Date** field is populated with today's date.
4. If required, select a different **Expiry Date**. For details, see Time and Date panels.
5. To specify an offset date for the new bucket, check the **Define Bucket Offset Date** field. This defines the date from which the bucket balance will become available.

   Result: The **Offset Date** field is populated with today's date.
6. If required, select a different **Offset Date**. For details, see Time and Date panels.

   Note: You must specify a date between the current date and the bucket expiry date, if set.
7. Click **OK**.

   If a maximum value has been set for the balance type and the new total value for the balance type exceeds this amount, you will see the Warning Max Balance Value Exceeded prompt.

8. Click **OK**.

   The new bucket balance displays in a new row in the Buckets table. You must edit the value of the bucket value so that the total value for the balance type is below or equal to the maximum value allowed.

   Note: Offset balance values which are not currently available are not taken into account when evaluating whether or not the maximum balance has been exceeded.

9. Click **OK** to return to the Edit Subscriber screen.

   Result: The balance for the new bucket is added to the existing balance for the balance type.

Related topic

Edit Wallet Balances

Editing wallet balance details

Follow these steps to edit the balance details for a selected balance type for a wallet.

1. From the left hand menu in the Edit Subscriber screen, select the option containing the Balance Types panel.
2. Highlight the row in the Balance Types table for the balance to edit and click **Details**.

   Result: You see the details screen for the selected balance.

3. To edit a bucket for the balance type, highlight the bucket in the Buckets table, and click **Edit**. Edit the details as described in Adding a new bucket balance.

   To delete a bucket for the balance type, highlight the bucket in the Buckets table, and click **Delete**.

4. Edit the **Balance** fields as required.

   Notes:

   The list of options for **Limit Type** depends on the setting of the **Allow Credit** setting (Wallet Management, **Balance Types** tab, Balance Type screen. See Balance Type Details fields) and whether the Balance Type is a default or not.

   For default Balance Type (Allow Credit always set), the options are:

   - Prepaid
   - Single Use
   - Postpaid
   - Limited Postpaid

   For non-default balance type and allow credit set, the options are:

   - Prepaid
   - Limited Postpaid

   For non default balance type and allow credit not set, the options is:

   - Prepaid

5. Click **OK** to return the Edit Subscriber screen.

   Warning: The updated wallet balance is saved only when you save the subscriber record.

Related topic

Edit Wallet Balances

Change Wallet Balance Adjustment Limits

The Adjustments panel in the Edit Subscriber screen enables you to adjust the subscriber's wallet balances by the specified amount. The adjustment amount can be added to, or subtracted from the selected wallet balance for the subscriber.

This feature is available only if:

- The wallet is on a VWS domain.
- The Adjustments panel is included in the configuration defined for the Edit Subscriber screen for the subscriber's product type in the Subscriber Profile Manager. For more information about configuring the Edit Subscriber screen, see the *SPM User's Guide*.

Adjustment limits

Adjustment limits are configured in the Edit Product Type screen and determine the minimum and maximum amount by which a balance type can be adjusted. The limits can be set at the following levels:

- Product type
- Individual user

If you are executing an adjustment for the current user, and limits have been configured for them, then these limits will be used. If no limits have been configured for the current user, then the product type limits will be used. For details on configuring adjustment limits, see Adjustments.

Maximum balance value

If a maximum value has been defined for the balance type, then the maximum balance policy will be applied to adjustment amounts which exceed the defined maximum.

For more information on:

- Maximum balance values, see Maximum balances
- Maximum balance policy, see Maximum balance policy

Adjusting a wallet balance

Follow these steps to adjust a selected balance.

1. From the left hand menu in the Edit Subscriber screen, select the option containing the Adjustment group of fields.
2. From the Balance Type drop down list in the Adjustment panel select the balance type that you want to adjust.
3. Type the value of the adjustment you want to make in the **Amount** field. If you want the amount to be subtracted from the current balance, then type a minus sign (-) in front of the amount.

Notes:

- The minimum and maximum values that you can specify for an adjustment are displayed in the panel.
- You will only be able to make a negative adjustment if the minimum value is set to a negative amount.

4. Click **Adjust**.

   Result: You see the Adjustment Confirmation screen.

5. Do one of the following:
   - If you want to execute the adjustment without saving any updates to the subscriber configuration, click **Execute Only**.
   - If you want to save the updates you have made to the subscriber configuration, and then execute the adjustment, click **Save & Execute**.
6. If you clicked **Save & Execute**, and EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
7. When the Adjustment Success prompt displays, click **OK**.

Merge Wallets

The Merge Wallets option in the Edit Subscriber screen provides the facility to merge primary and secondary wallets. Typically you use this option to merge the wallets for a subscriber with the wallets of another subscriber. If required, you can also use the merge process to consolidate the primary and secondary wallets for a subscriber.

Note: You can only use the merge wallet facility if both the source and target wallets are on the VWS. If either wallet is on a third party domain then you will not be able to use this facility.

Merge wallet rules

The following rules apply to wallet merges:

1. Only one wallet pair may be merged at a time. Therefore two merge operations are required to merge both the primary and the secondary wallets for a subscriber with those of a different subscriber.
2. If the source wallet is in a pre-use state, then the wallet is activated and the activation bonus is applied prior to the merge.
3. Once the merge has taken place, the source and target subscribers will share the same wallet. Normally, the target wallet will be shared and the source wallet will be deleted. However, if a secondary wallet is specified as the target, and a secondary wallet has not yet been created for the target subscriber, then the source wallet is shared.
4. After the merge, the state of the shared wallet will normally be set to that of the target wallet. If the target wallet does not yet exist then it is set to the state of the source wallet.

Merge wallet expiry policy

The expiry policy for the merged wallet will be set to one of the following:

- Best – This means that the best of both wallet expiry dates will be used. In other words, if the target wallet expires before the source wallet, the expiry date of the target wallet is extended to match that of the source wallet.
- Ignore – This means that the expiry date of the target wallet is not changed.

The policy applies to the target wallet.

For more information on configuring the wallet expiry policy see *CCS Technical Guide*.

Merge bucket expiry policy

The bucket expiry policy for the merged wallet will be set to one of the following:

- Merge – This means that buckets in the source wallet may be merged with buckets in the target wallet. For this to happen:
  - A source wallet bucket must have an expiry date
  - The target wallet bucket must be of the same balance type

  The merged bucket takes the latest date of both buckets.
- Move – This means that buckets in the source wallet may be moved to the target wallet. For this to happen, a source wallet bucket must have an expiry date. The expiry date of the moved bucket is not changed.

For more information on configuring the bucket expiry policy see the *CCS Technical Guide*.

Merging a wallet

Follow these steps to merge either the primary or secondary wallet for the current subscriber with another wallet.

1. In the panel at the top of the Edit Subscriber screen click **Merge Wallet**. The Merge Wallets screen displays.
2. In the **Source MSISDN** field, enter the CLI of the subscriber holding the source wallet for the merge.

   Note: The **Target MSISDN** field contains the CLI of the subscriber currently being edited. It is for reference only and cannot be changed.
3. Select the **Source Wallet Type** for the merge.
4. Select the **Target Wallet Type** for the merge
5. Click **Save & Merge**.

   Changes to the subscriber configuration made in the Edit Subscriber screens are saved, and the source and target wallets are merged.
6. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

Reservations

Data reservations can be maintained for a long time against an account without being charged.

The Reservation screens give the ability to view any outstanding reservations along with the wallet balances and to then action the reservation.

Because of the real time nature of reservation values changing, these screens are in effect a snap shot of the reservations. However any actions taken will be for the current values at the time of the action. See Reservation example.

Notes:

- Every time you select to display a subscriber's reservations in the Edit Subscriber screen, the Balances and Reservations sections are blank. To populate, click **Refresh**.
- By default, when **Refresh** is clicked, the reservations shown are for the first balances row.
- The tab for the subscriber's primary wallet displays when you view the reservations for a subscriber. The tab for the secondary wallet is present only when there is a secondary wallet for the subscriber.
- The reservations for a balance will show either the balance type used for the reservation, or (multiple) when more than one balance type has been used for the reservation.

Reservation columns and buttons

This table describes the function of each field or button.

Field	Description
Display Currency	Drop down list of available currencies the information can be displayed in.
Balance Category	Drop down list of all the balance categories for which information can be shown. Used to filter the amount of information shown on the screen.
Refresh	Button that will re-display the screen contents according to the Display Currency and Balance Category selection options. Both the Balances and Reservations sections will be populated.

Balances Section

Field	Description
Balance Type	The balance type for that row item.
Total Value	The total value in the selected currency for this balance type.
Uncommitted Reservation	The value of reservation not yet committed for this balance type.
Available Balance	The amount still available for reserving for this balance type.

Reservations Section

Field	Description
Balance Type	The balance type for this reservation.

Field	Description
Expires	The date and time when this reservation is due to expire.
Reserved	The amount currently reserved for this reservation.
Used	The amount currently used by the reservation.
How Ended	The cause for the ending of this reservation.
View Details	Button that shows the details for the selected Reservation row.

View reservation details

Follow these steps to view and then optionally perform an action on a reservation.

1. From the Edit Subscriber screen, select the **Reservations** option in the left hand list.

   The Reservation option displays in the Edit Subscriber screen.
2. (Optional) Select the currency from the **Display Currency** list.
3. (Optional) Filter the number of reservations displayed by selecting the display option from the **Balance Category** list.
4. Click **Refresh** to obtain the latest snap shot of the subscriber reservations.
5. Select the row in the **Balances** section for the balance type of the reservations you want to see.

   Result: The Reservations section is populated with the reservations data.
6. Select the reservation to view from the **Reservations** section.
7. Click **View Details**.

   Result: The Reservation Detail panel shows the reservation details.
8. Optionally perform an action on a reservation to:
   - Close the reservation without charging the subscriber
   - Close the reservation and charge the customer
   - Close the reservation and either charge, or do not charge the subscriber, depending on configuration setting for this subscriber

   See Action reservation.
9. Click **Done** to close the details panel.

   Note: The Balances and Reservations sections will be empty on returning to the Reservations screen.

Action reservation

Follow these steps to perform one or more actions on a reservation.

1. Select the reservation to action.

   Note: Each action explains the result of doing the action.

2. If you want to charge the subscriber for the uncommitted usage, perform the following steps:
   a. Click **Commit** to have the subscriber charged for the uncommitted usage. The Commit This Reservation? confirmation dialog displays.
   b. Click **Commit** to confirm the action.
3. If you want to cancel the reservation so that the subscriber is not charged for any uncommitted usage, perform the following steps:
   a. Click **Revoke.** The Revoke This Reservation? confirmation dialog displays.
   b. Click **Revoke** to confirm the action.
4. If you want to delete the reservation, perform the following steps:
   a. Click **Delete.** The Delete This Reservation? confirmation dialog displays.
   b. Click Delete to confirm the action.

   Note: When you delete a reservation, the subscriber is either charged or not charged for any uncommitted usage depending on reservation configuration for the CLI-DN tariff for the call. For more information, see the discussion on Rating Management, CLI-DN configuration.
5. If EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the reservation action in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
6. Click **Done**.

Related topic

Reservations

Reservation example

This is an example explaining the difference between what is seen in the snap shot and what is charged to the subscriber.

1. When **Refresh** is pressed the reservation amount is $3.40 and the used amount is $1.70.
2. In the background the billing engine does a subsequent reservation and the current reservation amount is $5.10 and the used amount is $3.60.
3. **Refresh** has NOT been pressed so the amounts shown on the screen are still $3.40 and $1.70 respectively.
4. The user commits the reservation.
5. The values committed are for the current reservation of $5.10 and $3.60.
6. The values displayed on the screen are still $3.40 and $1.70.

The user can look at the EDR viewer to determine the actual values on the action taken.

View EDRs

From the Edit Subscriber screen you can search for and view the EDRs that have been generated for the subscriber. For each EDR you can:

- View the EDR details

- Reverse any associated charges

If the EDR auditing feature is enabled, then you can monitor operator updates to a subscriber's financial data by viewing the reason entered by the operator for any updates that have been made through the Subscriber Management screens. The reason displays in the **Change Reason** field in the resulting EDR. For more information, see About Auditing Changes to Subscriber Data.

EDR Masking

You can set masking for EDR fields to prevent users from viewing part of the displayed values. To set masking for EDR fields see Adding EDR elements and Editing EDR elements. To specify the masking rules for EDR fields, see Editing EDR Viewer Display Masking.

You can disable masking of EDR fields for a user by specifying the EDR Viewer NO MASKING permission when you create a user template.

Note: The system administrator user receives the EDR Viewer NO MASKING permission by default.

See Creating User Templates in *SMS User's Guide* for information on creating a user template. See Assigning a template to a user in *SMS User's Guide* for information on assigning a template to a user.

View EDRs for Subscriber fields

This table describes the function of each field.

Field	Description
Display Currency	The currency for which the costs and balances should be displayed.
Use Start Date	If **Use Start Date** check box is selected, EDRs that have been generated after a specified date and time will be displayed. **Note:** The start date field is populated with the current date and time. Select a different date and time if required. For details, see Time and Date panels.
Use End Date	If **Use End Date** check box is selected, EDRs that have been generated before a specified date and time will be displayed. **Note:** The end date field is populated with the current date and time. Select a different date and time if required. For details, see Time and Date panels.
Wallet Types	The type of wallet for which the EDRs will be displayed. The options are: • Primary • Secondary
Number of EDRs	The maximum number of EDRs to search for. This can be left blank to find all the EDRs.

Field	Description
Called Number	A specific called party number dialed by the subscriber for which the EDRs will be displayed. This value is derived from the TN field of the resulting EDR.
EDR Tag	The operator defined EDR tag.
EDR Tag Value	The tag values of the EDRs describe the type and length of data required, and a description of the value per EDR.
Include Partial EDRs	By default only completed EDRs are shown. Select this box to also show intermediate partial EDRs.
Call Duration	The duration of the entire call, that is, the length of call in seconds. This value is derived from the DURATION field of the resulting EDR.
Discount	A list of discounts that exist for this call. This value is derived from the following fields of the resulting EDR: • DISCOUNT, • DISCOUNTS • CBTD_DISCOUNTS
Unit Type	The balance unit type for which the call cost is displayed. This is one of: • Cash • Time • Units
Call Cost	The call cost is based on the sum of all the associated costs (recharge or charge) for a specified balance unit type for the call. This value is derived from the COSTS field of the resulting EDR. **Note:** The cost for a recharge will be a negative value; the cost for a charge will be a positive value.

Finding EDRs

Follow these steps to find the EDRs that have been generated for a subscriber.

Note: The view EDRs panel is now pre-populated with default search conditions for the current subscriber. The search parameters are defined in the **sms.jnlp** and **ccp.jnlp** file. If no parameters are defined, search defaults to 2 days and all categories.

1. In the Edit Subscriber Screen, click **View EDRs**.

   Result: You see the View EDRs for Subscriber screen for the current subscriber, pre-populated with default search results.

   Note: If no parameters are found, this defaults to two days and all categories.

2. Enter the desired search criterion.

   For more information about the fields on this screen, see View EDRs for Subscriber fields.

3. Add the EDR Search Categories to search for to the Selected List. To:
   - Add a search category to the list, select it in the Available List and click **>**.
   - Add all the search categories to the list, click **>>**.
   - Remove a search category from the list, select it in the Selected List and click **<**.
   - Remove all the search categories from the list, click **<<**.
4. **Note:** If no search categories are selected then all the EDRs that match the search criteria will be returned.
5. Click **Search**.

   Result: All the EDRs that match the search criteria are displayed in the EDR search results table at the bottom of the screen.

   Tip: The text

   ```
   See Details
   ```

   in the **Balance Types** column indicates either that more than one balance type was used to charge for that EDR or that no charge was made and hence you must go into the details of the EDR itself.

EDR search results order

The EDR search results initially appear in date order with the most recent first. You can re-order EDRs based on the columns described in the following table.

Click this column	To...
Date	Order EDRs by date. The most recent EDR will be at the top of the list. Click on this column again to place records in reverse date order.
Balance Types	Place EDRs in ascending order of balance type ID. **Note:** This is the internal reference number for the balance type and not the balance type name.
Cost	Order EDRs by cost, from highest cost to lowest cost.
EDR Type	Place EDRs in ascending order of EDR type. Click on the column again to place records in descending order. **Note:** A secondary sort is used to place EDRs with the same EDR type in date order.

Re-ordering search results

Follow this step to re-order the search results.

1. Click on the column in the search results table to use for re-ordering.

   Result: The search results are re-ordered based on the values in the column.

Reversing a charge

Follow these steps to reverse a charge detailed in an EDR record.

1. In the EDRs for Subscriber screen, search for the EDR record to reverse. For details on searching for EDRs see Finding EDRs.
2. Highlight the record in the search results table.
3. Click **Reverse Charge**.
4. Do one of the following:
   - If you want to reverse the charge without saving any updates to the subscriber configuration, click **Execute Only**.
   - If you want to save the updates you have made to the subscriber configuration, and then reverse the charge, click **Save & Execute**.
5. If you clicked **Save & Execute**, and EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.
6. Click OK when the Reverse Charge prompt displays.

The charge is reversed for all the affected balance types and the subscriber data is reloaded. You are then returned to the Edit Subscriber screen.

Viewing EDR details

Follow these steps to view the details for a selected EDR.

1. Select the EDR record to view in the search results table in the View EDRs for Subscriber screen.

   Click **Display**.

   Result: You see the EDR Details for Subscriber screen.

   Note: The screen layout and available fields depend on the category and template definition configured for the EDR in CCS. For details, see EDR Templates.
2. To change the currency used to display costs and balances, select the **Display Currency** drop down list.
3. When you have finished viewing that EDR record, click **Close**.

   Result: You return to the View EDRs for Subscriber screen.
4. When you have finished viewing EDR records, click **Close**.

   Result: You return to the Edit Subscriber screen.

Execute Business Process Logic

A business process logic (BPL) task comprises a set of actions that fall within the defined business rules of the service provider, and that may be executed for the subscriber. Each business process is defined in the control plan referenced in the BPL record. When the BPL is executed, this control plan is invoked for the current subscriber.

Depending on how the BPL task has been configured, a charge may be imposed for the service provided and SMS notifications may be sent out. For information on how to configure BPL tasks, see Task Management.

Notes:

- Business process logic tasks are also referred to as tasks.
- This functionality will only be available to you if you have an appropriate license.

Executing a BPL

Follow these steps to execute a BPL for a subscriber.

Note: BPLs can only be executed for existing subscribers.

1. In the Edit Subscriber screen select the Subscriber option where the BPL to execute is located.

   Result: You see a button for each of the available BPLs.

2. Click the button for the BPL to execute.

   Result: You see the Confirm Execute Business Process Logic for Subscriber prompt.

3. If any parameters have been defined for the BPL, enter values for these as prompted.

   Warning: You must enter a value for all mandatory parameters.

4. To save any changes you have made to the subscriber configuration in the Edit Subscriber screens and then execute the BPL, click **Save & Execute**.

   To execute the BPL without saving changes to the subscriber configuration, click **Execute Only**.

   Result: You see the Execute BPL Result prompt.

5. Click **OK**.

View Subscriber Promotions

The Edit Subscriber screen can be configured to display the following types of promotion information:

- Subscriber promotion panel showing the list of promotions for which the currently selected subscriber is eligible
- Promotion information for a specific promotion.

Subscriber promotion panel fields

This table describes the function of each field.

Field	Description
Promotion	Lists the promotions for which the current subscriber is eligible.

Field	Description
Status	Displays the global limited liability status value for each promotion. Options are: • Unset • Eligible • Ineligible
Expiry Date	Displays the global limited liability status expiry date for each promotion.

Promotion info field fields

The Promotion Info Field displays status, balance and expiry details for a specified promotion. The promotion is specified when the Promotion Info Field is configured in the Subscriber Profile Manager.

This table describes the function of each field.

Field	Description
Name	Promotion name.
Status	Promotion status. Either active or inactive.
Tracker Balance Value	The total value of the tracker balance used to trigger the promotion for the subscriber.
Tracker Balance Expiry Date	Displays the first expiry date for the tracker balance. If an expiry date has not been specified, then "Does not expire" will be displayed. **Note:** This field will only be visible if the **Show Expiry Date** check box was selected when this Promotion Info Field was configured in the SPM.
Individual Limited Liability Balance	The subscriber's total balance held in the limit balance type configured for the promotion.
Individual Limited Liability Expiry Date	Displays the first expiry date for the individual limited liability balance. If an expiry date has not been specified, then `Does not expire` will be displayed.
Max Individual Limited Liability	Maximum individual limited liability configured for the promotion.
Global Liability Status	The options are • Unset • Eligible • Not Eligible

Perform Credit Transfers

The **Credit Transfers** option in the Edit Subscriber screen lets you perform credit transfers. A credit transfer moves credit from one subscriber to another. For information on how to configure credit transfers, see Transfer Management.

Note: The credit transfer functionality will only be available to you if you have an appropriate license.

Maximum balance value

If a maximum value has been set for a balance type, then the maximum balance policy will be applied to credit transfers which exceed the defined maximum.

For more information, see:

- Maximum balances
- Maximum balance policy

Credit transfer types

Two types of credit transfer may be performed:

- Service bundle
- Peer-to-peer

Credit transfer voucher type

When a credit transfer is performed, cash credit from the purchasing subscriber is used to buy a specified voucher type which is then applied to the recipient's wallet. The voucher type definition may include any of the following:

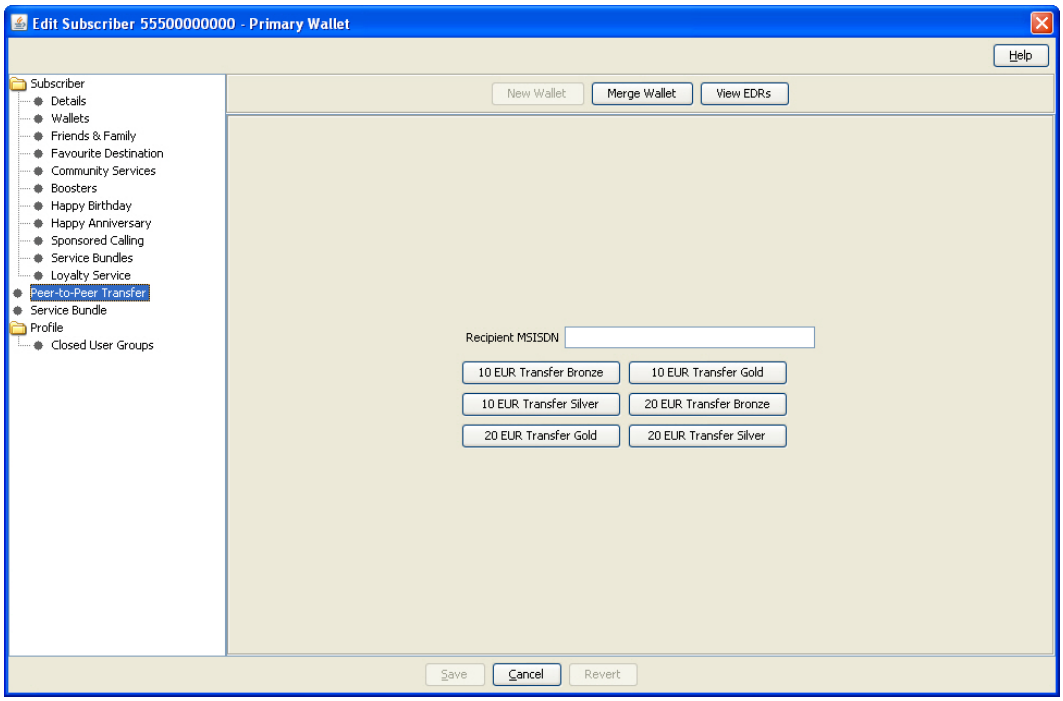
- A list of balance types where the value and/or the expiry periods have changed
- An extension to the recipient's wallet expiry period
- A product type swap on the recipient's wallet
- A limited list of available product types (the credit transfer will only succeed if the product type for the recipient matches one of the product types in the list)
- Multiple balance types which may also be associated with a limited list of product types

Performing a credit transfer

Follow these steps to make a credit transfer for a subscriber.

1. In the Edit Subscriber screen choose the credit transfer option you require from the left hand menu:
   - To make a peer-to-peer credit transfer, select **Peer-to-Peer Transfer**.
   - To make a service bundle credit transfer, select **Service Bundle**.

   Result: You see a series of buttons on the Edit Subscriber screen such as in this example. There is one button for each of the available credit transfer definitions.



2. In the **Recipient MSISDN** field, enter the CLI for the subscriber who will receive the credit.

   Tip: This field is optional. If you do not enter a value, then the current subscriber ID is used.

3. Click the button for the credit transfer to make.

   Result: You see the Confirm Credit Transfer prompt.

4. If the subscriber has two wallets, then **Wallet Type** selection will be enabled for the purchaser/recipient. Select the required wallet types for the transfer.

5. If the **Security PIN** field is enabled then you must enter the PIN for the purchaser subscriber.

   Warning: The PIN must be already configured in the subscriber details.

6. To save any changes you have made to the subscriber configuration in the Edit Subscriber screens before making the credit transfer, click **Save & Execute**.

   To make the credit transfer without saving changes to the subscriber configuration, click **Execute Only**.

7. If you clicked **Save & Execute**, and EDR auditing is enabled, then the **Change Reason** dialog displays. Enter the reason for the change in the **Change Reason** field, and click **OK**. The reason can be up to 200 characters long.

3

Subscriber Management - Product Type

This chapter explains the Product Type configuration screens.

This chapter contains the following topics.

Product Type

Name and Periods

Control Plans

Announcements

Call Barring

FF White List

Number Translations

Bypass Numbers

Creditcard Recharge Rules

Second Currency

What's New

Help & Info

Product Type Swaps

Node Options

Remote Access

Friends and Destination

Friends and Family

Promotional Destination Rates

Cumulative Balances

Real-Time Wallet Notifications

Periodic Charges

Adjustments

Wallet Life Cycle

Discounts

Subscriber Profile Limitations

Profile Fields

Copying Product Types

Product Type

The **Product Type** tab lets you view, add, edit, copy and remove product types. For more information about product types, see Product Types.

For more information about the aspects of a product type which can be configured, see Configuration options summary.

Before you add a product type

Before you start to add a new product type, ensure you have configured any elements you will use. Product types may use:

- ACS configuration:
  - Languages
  - Announcement sets
  - Holiday sets
  - Geography sets
  - LNSTRING and LOPREFIX group profile fields
  - Control plans which subscribers with this product type will be sent to

  For more information, see *ACS User's Guide, ACS Configuration* chapter.
- CCS configuration:
  - Tariffs
  - Named events

  For more information, see Rating Management.

Adding product types

Follow these steps to add a new product type.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Product Type** tab, click **New**.

   Result: You see the New Product Type screen.

   Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.
3. Configure this record by completing the required details on the different option panels on this screen.

   All configuration options must be completed to finalize a product type. However, once the name and the control plans have been defined for the Product Type the configuration can be saved at any point by clicking **Save**.

   For more information about the available options, see Configuration options summary.

4. Click **Save**.

Related topic

Product Type

Configuration options summary

This table lists all the product type configuration options and their functionality.

Option	Description	More Information
Name and Periods	Defines the core details of the product type including name and expiry periods.	Name and Periods
Control Plans	Defines the control plans which are used for subscribers who have this product type.	Control Plans
Announcements	Sets the product type-dependant announcements for some interaction feature nodes.	Announcements
Call Barring	This option: • Configures the call barring for the selected product type. • Shows the numbers that are allowed or barred at a product type level.	Call Barring
FF White List	Use to create and edit the list of number prefixes that all friends and family numbers must begin with. Typically, the white list covers all local networks and local areas. **Tip:** Friends and family numbers can only be accepted if they are included in the FF White List, but are not included in the friends and family black list for this service provider. For more details, see Friends and Family Black List.	FF White List
Number Translations	Use to view and maintain the number translation short codes that are mapped to specific termination numbers for the selected product type.	Number Translations

Option	Description	More Information
Bypass Numbers	Use to view and maintain the bypass numbers that are allowed or barred at the product type level for the selected product type. A bypass number is a number that has a discount applied to it. The discount that applies to bypass numbers is set: • At the service level, on the in the Service Management, Edit Resource Limits screen. For details, see Resource Limits. • At product type level, in the Discounts option.	Bypass Numbers
Creditcard Recharge Rules	Use to set the rules for credit card recharge. These rules will then apply to any credit card recharge that is attempted on wallets associated with the selected product type.	Creditcard Recharge Rules
Second Currency	Configures a second currency for wallets associated with the selected product type.	Second Currency
What's New	Use to enable the What's New feature node. This node plays the caller an advertising message and offers the option to divert the call to a service number for further information. For more information about the What's New feature node, see *Feature Nodes Reference Guide*.	What's New
Help & Info	Use to enter details for the Help Info Menu feature node. For more information about the Help Info Menu feature node, see *Feature Nodes Reference Guide*.	Help & Info

Option	Description	More Information
Product Type Swaps	Use to create a product type swap menu. This entails setting a number of options in various parts of the system. There are two stages to this procedure: 1. Create a named event. Perform this once to create the set and event. 2. Modify the product that you wish to enable swapping from. You need to repeat this stage for every product that has the swap option enabled.	Product Type Swaps
Node Options	Use to select the options that are offered to the caller on the Main Menu and Personal Options Menu feature nodes in Control Plans associated with this product type. For more information about these feature nodes, see *Feature Nodes Reference Guide*.	Node Options
Remote Access	Use to configure access to remote access for subscribers with this product type. **Note:** Subscribers must also have the Remote Access check box selected in their subscriber details. For more information, see Remote Access.	Remote Access
Friends and Destination	Use to configure the product type level settings for the F&D service.	Friends and Destination
Friends and Family	Use to configure the product type level settings for the F&F service.	Friends and Family
Promotional Destination Rates	Lets you apply a discount to short messages, when a subscriber has sent a certain amount of short messages in the month already.	Promotional Destination Rates
Cumulative Balances	Defines the cumulative balance plan to use with this product type.	Cumulative Balances
Real-Time Wallet Notifications	Defines the notifications which are sent out due to real-time events such as wallet recharges. **Note:** This functionality is only available for the VWS domain.	Real-Time Wallet Notifications

Option	Description	More Information
Periodic Charges	Defines which periodic charges can apply to wallets with this product type. The charges are applied on a regular basis to all the wallets with this product type. Each charge either credits or debits the specified balance type. **Note:** This functionality is only available for the VWS domain.	Periodic Charges
Adjustments	Use to set the value for the minimum and maximum adjustments that may be made to the subscriber's balances. **Note:** This functionality is only available for the VWS domain.	Adjustments
Wallet Life Cycle	Defines the WLC periods which control feature availability around wallet expiry dates. **Note:** This functionality is only available for the VWS domain.	Wallet Life Cycle
Discounts	Used to set the discounts applied to a product type bypass number.	Discounts
Subscriber Profile Limitations	Use to set product type limits for LNSTRING and LOPREFIX profile field types. The limits set here override the limits set in the Service Management, Resource Limits screen. **Note:** Profile field limitations may only be set in the Edit product type screen.	Subscriber Profile Limitations
Profile	Use to configure the profile fields (excluding LNSTRING and LOPREFIX profile field types) that have been added to the product type. **Note:** Profile fields can only be set in the Edit Product Type screen.	Profile Fields

Editing product types

Follow these steps to edit an existing product type.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. From the **Product Type** tab, select the product type to edit.
3. Click **Edit**.

   Result: You see the Edit Product Type screen, as shown in the example below.

Note: The tabs or options available to you on a screen will depend upon which CCS components have been installed on the system and the Oracle license agreement.

Access to elements of this screen are controlled by user permissions. If you cannot see some of the functionality described for this screen, your permissions may have been set to restrict access to that element.

4. Check or update the details on the different option panels as necessary.

   For more information about the available options, see Configuration options summary.

5. If you have made changes to the product type's details, click **Save**.

   If you do not want to make changes to the product type's details, click **Cancel**.

Related topic

Product Type

Deleting Product Types

Follow these steps to delete an existing product type.

Note: You cannot delete a product type that is in use.

1. In the Subscriber Management screen, select the service provider from the **Service Provider** list.
2. On the **Product Type** tab, select the product type to delete.
3. Click **Delete**.

   Result: You see the Delete confirmation prompt.

4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Product Type successfully deleted prompt.

5. Click **OK**.

   Result: You are returned to the **Product Type** tab.

Related topic

Product Type

Rules for Expiry Period Extensions

The system will take the maximum value of the following:

1. Existing expiry period
2. Today’s date plus recharge rule expiry period (voucher or credit card)
3. Today’s date plus product type minimum expiry extension

Example: If you have:

- A wallet with an expiry date one month in the future
- A credit card or voucher with an expiry date extension of seven days
- Your product type has a minimum expiry date extension of two months

When you recharge, your account expiry period will be today plus two months.

Name and Periods

The Name & Periods option sets general information about the product type, including:

- Name and description
- Currency defaults
- Expiry and recharge minimums
- Wallet state periods

For more information, see Wallet states.

Name & Periods fields

This table describes the function of each field.

Field	Description
Display Currency	The currency cash records for this product type are stored in.
Set as default	Whether or not the display currency should be used as the default currency for the Edit Subscriber screen.
Name	The name of this product type.
Description	A description of this product type. Maximum of 2000 characters.
Initial Wallet Expiry Period	The number of days and hours between activating wallets with this product type and their expiry. The maximum is 999 days and 23 hours. If this field is left blank, wallets of this type will never expire.
Initial Balance Expiry Period	The number of days and hours between activating balances and buckets within wallets with this product type and their expiry.
Pre-use Subscriber Batch Wallet Expiry Period	The number of days and hours between creating wallets with this product type and their expiry if they are not activated. **Note:** This expiry date is deactivated when the wallet becomes active.
Recharge Minimum Wallet Period Extension	The minimum number of days and hours a wallet with this product type can have its expiry period extended by when it is recharged. 0 (zero) value in this field means there is no set minimum expiry period for this product type.

Field	Description
Recharge Minimum Balance Expiry Period Extension	The minimum number of days and hours a balance or bucket within a wallet with this product type can have its expiry period extended when it is created or updated. 0 (zero) value in this field means there is no set minimum expiry period for this product type.
Wallet Expiry Warning Threshold	The number of days before the wallet expiry date when a warning about the wallet expiry will be sent to subscribers with this product type.
Balance Expiry Warning Threshold	The number of days before the balance expiry date when a warning about the balance expiry will be sent to subscribers with this product type.
Maximum Call Length (secs)	The maximum number of seconds a call using this product type can last for.
Active to Dormant	The number of days and hours a wallet with this product type can have no activity before its status is changed from active to dormant. A dormant wallet may be used, and when it is used, its status will return to active.
Dormant to Terminated	The number of days and hours a wallet with this product type can have no activity before its status is changed from dormant to terminated. A terminated wallet may not be used and has all existing credit removed.
Terminated to Removed	The number of days and hours after its expiry date has passed before a wallet with this product type is removed from the system. A manual intervention is required to change the status back to active or dormant.
Initial Value	The amount (in currency subunits) of the initial balance of wallets of this product type.

Field	Description
Number Of Free Swaps Allowed	The number of times wallets with this product type may be swapped to to wallets of with a different product type. If a wallet with this product type is changed to a different product type, the number of free swaps allowed is modified to reflect the new product type. **Example:** • Product Type 1 is allowed two free swaps. • Product Type 2 is allowed only one free swap. • Wallet A is set up as Product Type 1, so it is allowed two free swaps. Wallet A uses one of its two free swaps to change to Product Type 2. As Product Type 2 only allows a single free swap, any further wallet swaps will incur a charge. • Wallet B is set up as Product Type 2, so it is allowed a single free swap. • Wallet B uses its free swap to change to Product Type 1. As Product Type 1 allows two free swaps, Wallet B may change to another Product Type without incurring a charge.

Adding Name & Period details

Follow these steps to add the name & period details for a product type.

1. In the New Product Type screen, select the Name & Periods option from the left hand list.

   Result: You see the Name & Periods configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Name & Periods fields.

Editing Name & Period details

Follow these steps to view or change the name & period details for a product type.

1. In the Edit Product Type screen, select the Name & Period option from the left hand menu.

   Result: You see the Name & Period options.

2. Check or update the name & period details as necessary.

   For more information about the fields in this option, see Name & Periods fields.

Control Plans

The Control Plans option configures the control plans to use for incoming and outgoing calls made using subscriber accounts which are associated with this product type.

Control Plan fields

This table describes the function of each field.

Field	Description
Default Tariff Plan	The tariff plan that will be used by any service which does not set its own override tariff. **Tip:** This field is only available on the Control Plan option panel.
CCS Capability	The service type which will use this configuration. The list displays all the CCS Capabilities a service provider can use.
Control Plan	The control plan subscribers who have this product type and are using this service will use. The Control Plan drop down list displays all the control plans a subscriber can use. **Tip:** This list can be shortened by using the **Search By** field and then **Search**. **Note:** If a subscriber calls the CCS service and no control plan exists for the applicable product type, then their call will be released.
Search By	Use initial characters of the control plan name or combine with % (match on any number of characters), or _ (match on a single character). **Examples:** Search for `e%SMS` will find all control plan names beginning with e and containing SMS. Search for `e_han%SMS` will find all control plan names beginning with e, containing the string han in positions 3 to 5, and containing SMS. The list can be further restricted by entering a maximum number of names to show in the Max Rows field.
Tariff Plan Override	Whether or not to override the default tariff plan set in the Control Plan option panel. **Tip:** This field is only available on the Control Plan option panel.
Override Tariff Plan with	If the Tariff Plan Override check box is selected, calls using this service will use the tariff plan selected in this drop down list. **Notes:** • This tariff plan overrides the default tariff plan set in the Control Plan option panel. • This drop down list is populated by the Tariff Plan tab on the Rating Management screen. For more information about Tariffs, see Tariff Plan.
Trigger Override	Select the check box if you wish to override the in-session notification trigger for the selected call capability and product type combination.
Override Trigger With	Select the trigger from the drop down list.

Adding Control Plans

Follow these steps to add the control plan configuration to a product type.

1. In the New Product Type screen, select the Control Plans option from the left hand list.

   Result: You see the Control Plans configuration options.

   For an example screen of the Control Plan options, see Control Plan option.

2. Click **New**.

   Result: You see the New Control Plan screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Control Plan fields.

   Note:

   The **Override Tariff Plan With** field drop down list can only be changed if the **Tariff Plan Override** check box is selected.

   The **Override Trigger With** field drop down list can only be changed if the **Trigger Override** check box is selected.

4. Click **Apply**.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

Related topic

Control Plans

Editing control plans

Follow these steps to view or edit the control plan details for a product type.

1. In the Edit Product Type screen, select the Control Plans option from the left hand list.

   Result: You see the Control Plans configuration options.

2. In the Control Plans table select the record to change and click **Edit**.

   Result: You see the Edit Control Plan screen.

3. Check or update the control plan details as necessary.

   For more information about the fields in this option, see Control Plan fields.

   Note:

   The Override Tariff Plan with drop down list can only be changed if the **Tariff Plan Override** check box is selected.

   The **Override Trigger With** field drop down list can only be changed if the **Trigger Override** check box is selected.

4. Click **Update**.

Related topic

Control Plans

Deleting control plans

Follow these steps to delete a control plan from a product type.

1. In the Edit Product Type screen, select the Control Plans option from the left hand list.

   Result: You see the Control Plans configuration options.

2. In the Control Plans table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

Related topic

Control Plans

Announcements

The Announcements option configures the announcements which will be played to incoming and outgoing calls made using subscriber accounts which are associated with this product type.

Announcements fields

This table describes the function of each field.

Field	Description
Announcement Set	Under the **Time Left Announcement** section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers when they have a limited amount of credit remaining. The drop-down list displays all the Announcement Sets a Service Provider can use.
Announcement Entry	Under the **Time Left Announcement** section, this field indicates the Announcement Entry that will be played to Subscribers when they have a limited amount of credit remaining. The time period is set in the **CLI-DN** tab of the Rating Management screen. The drop-down list displays all the Announcement Entries from the selected Time Left Announcement Set.
Announcement Set	Under the **Product Name Announcement** section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers when their wallet is swapped from this product type to another type. The drop-down list displays all the Announcement Sets a Service Provider can use.

Field	Description
Announcement Entry	Under the **Product Name Announcement** section, this field indicates the Announcement Entry that will be played to Subscribers when their wallet is swapped from this product type to another type. The time period is set in the **CLI-DN** tab of the Rating Management screen. The list displays all the Announcement Entries from the selected Product Name Announcement Set.

Adding Announcement details

Follow these steps to add the Announcement details for a product type.

1. In the New Product Type screen, select the Announcements option from the left hand list.

   Result: You see the Announcements configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Announcements fields.

Editing Announcements details

Follow these steps to view or change the Announcements details for a product type.

1. In the Edit Product Type screen, select the Announcements option from the left hand menu.

   Result: You see the Announcements options.

2. Check or update the Announcements as necessary.

   For more information about the fields in this option, see Announcements fields.

Call Barring

The Call Barring option defines which numbers can be called by subscribers with this product type.

Note: Allowed/barred lists can also be configured at the following levels:

- System-wide
- Service Provider (see the Barred List tab)
- Subscriber account (see New/Edit Subscriber screen, Call Barring option).

Call Barring fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which cannot be called by subscribers with this product type.
List Type	Whether the numbers in the Number List will be allowed or barred. **Note:** Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/ barred list for this product type.

Adding Call Barring details

Follow these steps to add the Call Barring details for a product type.

1. In the New Product Type screen, select the Call Barring option from the left hand list.

   Result: You see the Call Barring configuration options.
2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Call Barring fields.

   For more information about how to configure the Number List, see Number lists.

Editing Call Barring details

Follow these steps to view or change the Call Barring details for a product type.

1. In the Edit Product Type screen, select the Call Barring option from the left hand menu.

   Result: You see the Call Barring options.
2. Check or update the Call Barring details as necessary.

   For more information about the fields in this option, see Call Barring fields.

   For more information about how to configure the Number List, see Number lists.

FF White List

The FF White List option sets the numbers which subscribers with this product type can nominate for their Friends and Family list.

For more information about the Friends and Family feature, see Friends and Family/ Destination Discount Configuration.

FF White List fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which cannot be nominated as friends and family discounted numbers by subscribers with this product type.
List Type	Whether the numbers in the Number List will be allowed or barred. **Note:** Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/barred list for this product type.

Adding FF White List details

Follow these steps to add the FF White List details for a product type.

1. In the Edit Product Type screen, select the FF White List option from the left hand list.

   Result: You see the FF White List configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see FF White List fields.

   For more information about how to configure the Number List, see Number lists.

Editing FF White List details

Follow these steps to view or change the FF White List details for a product type.

1. In the Edit Product Type screen, select the FF White List option from the left hand menu.

   Result: You see the FF White List configuration options.

2. Check or update the FF White List details as necessary.

   For more information about the fields in this option, see FF White List fields.

   For more information about how to configure the Number List, see Number lists.

Number Translations

The Number Translations option defines the short number translations which apply to calls by subscribers with this product type.

Note: Number Translation can also be configured at the following levels:

- System-wide
- Service Provider (see the Number Translation List tab), and
- Subscriber account (see New/Edit Subscriber screen, Number Translation option).

Number Translations fields

This table describes the function of each field.

Field	Description
Number List	The short number mappings which apply to subscribers with this product type.
In	The string of digits which are called to access the short number.
Out	The destination number calls to the corresponding In number will be terminated to.

Adding number translation details

Follow these steps to add the Number Translation details for a product type.

1. In the New Product Type screen, select the Number Translations option from the left hand list.

   Result: You see the Number Translations configuration options.

2. Configure this record by entering data in the fields on this screen.

   Edit the **Number List** as required:

   - To add a number to the list:
     - in the **In** field, type the service short code you want to translate from
     - in the **Out** field, type the termination number you want to translate the short service code to, and click **Add**.
   - To remove a number from the list, select the number in the **Number List** grid and click **Delete**.

For more information about the fields on this screen, see Number Translations fields.

Editing Number Translation details

Follow these steps to view or change the Number Translation details for a product type.

1. In the Edit Product Type screen, select the Number Translation option from the left hand menu.

   Result: You see the Number Translations options.

2. Check or update the Number Translations details as necessary.

   Edit the **Number List** as required:

   - To add a number to the list:
     - in the **In** field, type the service short code you want to translate from
     - in the **Out** field, type the termination number you want to translate the short service code to, and click **Add**.
   - To remove a number from the list, select the number in the **Number List** grid and click **Delete**.

For more information about the fields in this option, see Number Translations fields.

Bypass Numbers

The Bypass Numbers option defines the destination numbers which subscribers with this product type can call with the bypass discount being applied.

Notes: Bypass Number discounts are applied at the rate set in the Bypass Number Discount options in the Resource Limits for the Service Provider.

Bypass Numbers can also be configured at the following levels:

- System-wide
- Service Provider (see the Edit Resource Limits - Bypass Numbers option).

Bypass Numbers fields

This table describes the function of each field.

Field	Description
Number List	The numbers or number prefixes which subscribers with this product type can call and receive the bypass numbers discount.
List Type	Whether the numbers in the Number List will be allowed or barred from receiving the bypass numbers discount. **Note:** Depending on the list type, all the numbers in the list will be either allowed or barred for this product type. It is not possible to have some allowed and some barred numbers in the list.
Ignore	Whether the service should ignore the allowed/barred list for this product type.

Adding Bypass Number details

Follow these steps to add the Bypass Numbers details for a product type.

1. In the New Product Type screen, select the Bypass Numbers option from the left hand list.

   Result: You see the Bypass Numbers configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Bypass Numbers fields.

   For more information about how to configure the Number List, see Number lists.

Editing Bypass Numbers details

Follow these steps to view or change the Bypass Numbers details for a product type.

1. In the Edit Product Type screen, select the Bypass Numbers option from the left hand menu.

Result: You see the Bypass Numbers options.

2. Check or update the Bypass Numbers details as necessary.

   For more information about the fields in this option, see Bypass Numbers fields.

   For more information about how to configure the Number List, see Number lists.

Creditcard Recharge Rules

Creditcard recharge rules control how subscribers can use their credit cards to recharge their accounts.

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server, or a third party Voucher and Wallet Server that supports the credit card recharge rules.

Creditcard Recharge Rules fields

This table describes the function of each field.

Field	Description
Order	Where in the recharge options list this entry should appear. The list is played to a caller as a series of recharge options when the caller attempts a credit card recharge.
Amount (littles)	The amount (in subunits of currency) of recharge which will be added to wallets with this product type when this option in a credit card recharge is completed.
Currency	The currency to make the recharge in. The list displays all the currencies a Subscriber can use. For more information about creating new currencies, see Currency.
Balance Expiry Period	The number of days after wallet activation at which wallets with this product type will have their balance reduced to 0. If this field is left blank, the wallet balance will never expire. The setting in this field overrides the setting on the Name & Periods option when a credit card recharge is made.
Wallet Expiry Period	The number of days after wallet activation at which wallets with this product type will expire. If this field is left blank, the wallet will never expire. The setting in this field overrides the setting on the Name & Periods option when a credit card recharge is made.

Adding Creditcard Recharge Rule details

Follow these steps to configure the Creditcard Recharge Rules for this product type.

1. In the New Product Type screen, select the Creditcard Recharge Rules option from the left hand menu.

   Result: You see the Creditcard Recharge Rules configuration options.

2. Click **Insert**.

   Result: You see the Edit/Insert screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Creditcard Recharge Rules fields.

4. Click **Save** to save the details to the database and return to the New Product Type screen.

   Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.

5. If required, repeat steps 2-4 until all the recharge options have been configured.

Editing Creditcard Recharge Rule details

Follow these steps to configure the Creditcard Recharge Rules for this product type.

1. In the Edit Product Type screen, select the Creditcard Recharge Rules option from the left hand menu.

   Result: You see the Creditcard Recharge Rules configuration options.

2. In the Creditcard Recharge Rules grid, select the record you want to change and click **Insert**.

   Result: You see the Edit/Insert screen.

3. Check or update the Creditcard Recharge Rules details as necessary.

   For more information about the fields on this screen, see Creditcard Recharge Rules fields.

4. Click **Save** to save the details to the database and return to the Edit Product Type screen.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

5. If required, repeat steps 2-4 until all the recharge options have been configured.

Deleting Creditcard Recharge Rule details

Follow these steps to delete a Creditcard Recharge Rule from a product type.

1. In the Edit Product Type screen, select the Creditcard Recharge Rules option from the left hand menu.

   Result: You see the Creditcard Recharge Rules configuration options.

2. In the Creditcard Recharge Rules table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

4. If required, repeat steps 2 and 3 until all the Creditcard Recharge Rules to delete have been deleted.

Second Currency

A product type's Secondary Currency provides an additional currency which can be used in subscriber interfaces. All values are stored in the main product type currency, but can be translated into the secondary currency using the exchange rate between the currency.

For more information about currencies, see Currency.

For more information about exchange rates, see Exchange Rates.

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server, or a third party Voucher and Wallet Server that supports the use of second currencies.

Second Currency fields

This table describes the function of each field.

Field	Description
Play balance in 2nd currency	Whether wallets with this product type should have a balance which will be announced in the secondary currency. Selecting this option enables the Dual Currency announcements set in the Configure Announcements panel of the New/Edit Currency screen. For more information about creating new currencies, see Currency.
2nd Currency	The currency which will be the alternate currency for wallets with this product type.

Adding Second Currency details

Follow these steps to add the Second Currency details for a product type.

1. In the New Product Type screen, select the Second Currency option from the left hand menu.

   Result: You see the Second Currency configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Second Currency fields.

Editing Second Currency details

Follow these steps to view or change the Second Currency details for a product type.

1. In the Edit Product Type screen, select the Second Currency option from the left hand menu.

   Result: You see the Second Currency options.

2. Check or update the Second Currency as necessary.

For more information about the fields in this option, see Second Currency fields.

What's New

The What's New configuration option defines how the What's New feature node behaves when used in a control plan for this product type. For more information about using the What's New feature node, see the *Feature Nodes Reference Guide*.

What's New fields

This table describes the function of each field.

Field	Description
Whats new enabled	Whether the What's New feature node should be available to control plans for subscriber accounts with this product type.
Announcement	The announcement which will be played to a caller when the call traverses the What's New node in the control plan.
Dialed number	The number to route the caller to if they choose to hear more about the advertised feature.

Adding What's New details

Follow these steps to add the What's New details for a product type.

1. In the New Product Type screen, select the What's New option from the left hand menu.

   Result: You see the What's New configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see What's New fields.

Editing What's New details

Follow these steps to view or change the What's New details for a product type.

1. In the Edit Product Type screen, select the What's New option from the left hand menu.

   Result: You see the What's New options.

2. Check or update the What's New details as necessary.

   For more information about the fields in this option, see What's New fields.

Help & Info

The Help & Info configuration defines how the Help Information feature node behaves when used in a control plan for this product type. For more information about using the Help Information feature node, see the *Feature Nodes Reference Guide*.

Help & Info fields

This table describes the function of each field.

Field	Description
Order	The number specifying where in the options list this entry should appear. The list is played to a caller as a series of help menu options when the caller accesses the Help & Info menu.
Summary Announcement	The Announcement Entry to play to callers to summarize the contents of this help menu item.
Detailed Announcement	The Announcement Entry to play to callers who choose to listen to the detailed contents of this help menu item.

Adding Help & Info details

Follow these steps to add the Help & Info details for a product type.

1. In the New Product Type screen, select the Help & Info option from the left hand menu.

   Result: You see the Help & Info configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Help & Info fields.

Editing Help & Info details

Follow these steps to view or change the Help & Info details for a product type.

1. In the Edit Product Type screen, select the Help & Info option from the left hand menu.

   Result: You see the Help & Info options.

2. Check or update the Help & Info details as necessary.

   For more information about the fields in this option, see Help & Info fields.

Product Type Swaps

The Product Type Swap configuration defines how the Product Type Swap feature node behaves when used in a control plan for this Product Type. For more information about using the Product Type Swap feature node, see *Feature Nodes Reference Guide*.

Product Type Swap fields

This table describes the function of each field.

Field	Description
Allowed Type	The product type the subscriber can choose for this menu item.

Field	Description
Menu Order	The number value specifying where in the list of product type menu options this choice occurs.

Adding Product Type Swap details

Follow these steps to add the Product Type Swap details for a product type.

Warning: To use product type swaps, you must also have configured a named event set called "Product Type" and it must have a named event in the set called "Product Type Swap". The Product Type Swap named event must have the **Contributes to Monthly Expenditure** check box selected. These values must be exact, or the product type swap will fail.

1. In the New Product Type screen, select the Product Type Swap option from the left hand menu.

   Result: You see the Product Type Swap configuration options.

2. Click **Insert**.

   Result: You see the Edit/Insert screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Product Type Swap fields.

4. Click **Save** to save the details to the database and return to the New Product Type screen.

   Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.

5. If required, repeat steps 2-4 until all the recharge options have been configured.

Editing Product Type Swap details

Follow these steps to configure the Product Type Swaps for this product type.

1. In the Edit Product Type screen, select the Product Type Swaps option from the left hand menu.

   Result: You see the Product Type Swaps configuration options.

2. In the Product Type Swap table, select the record to change and click **Insert**.

   Result: You see the Edit/Insert screen.

3. Check or update the Product Type Swap details as necessary.

   For more information about the fields on this screen, see Product Type Swap fields.

4. Click **Save** to save the details to the database and return to the Edit Product Type screen.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

5. If required, repeat steps 2-4 until all the recharge options have been configured.

Deleting Product Type Swap details

Follow these steps to delete a Product Type Swap from a product type.

1. In the Edit Product Type screen, select the Product Type Swap option from the left hand menu.

   Result: You see the Product Type Swap configuration options.

2. In the Product Type Swap table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

4. If required, repeat steps 2 and 3 until all the Product Type Swaps to delete have been deleted.

Node Options

The Node Options option sets product type-specific configuration for these feature nodes:

- Main Menu, and
- Personal Options Menu.

Node Options fields

This table describes the function of each field.

Field	Description
Allow product type swaps	Whether the Product Swap functionality should be available as a product type swap option on the Main Menu and the Personal Options Menu nodes.
Allow fixed line maintenance	Whether the option to add a fixed line for a prepaid subscriber should be available as an option on the Main Menu and the Personal Options Menu.
Allow outcall	Whether the option making follow-on calls out of the Main Menu node should be available.
Enable help and info	Whether the option of finding more information from the Help & Info Menu should be available on the Main Menu node.
Enable voucher recharge	Whether the option to recharge vouchers should be available.
Balance status warning threshold (system currency: littles)	The amount below which an announcement will be played to the caller warning them about a low account balance. The balance amount will be in the currency of the account.

Adding Node Options details

Follow these steps to add the Node Options details for a product type.

1. In the New Product Type screen, select the Node Options option from the left hand list.

   Result: You see the Node Options configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Node Options fields.

Editing Node Options details

Follow these steps to view or change the Node Options details for a product type.

1. In the Edit Product Type screen, select the Node Options option from the left hand menu.

   Result: You see the Node Options options.

2. Check or update the Node Options details as necessary.

   For more information about the fields in this option, see Node Options fields.

Remote Access

The Remote Access option defines whether or not subscribers with this product type can use the IVR system.

Note: Subscribers may not be able to access to the IVR system if:

- no IVR control plan is set up, or
- the subscriber's account denies access to the IVR system.

Adding Remote Access details

Follow these steps to add the Remote Options details for a product type.

1. In the New Product Type screen, select the Remote Options option from the left hand list.

   Result: You see the Remote Options configuration options.

2. To enable access to the IVR system for subscribers with this product type, select the **Allowed** field.

   Note: Subscribers must also have the Remote Access check box selected in their Subscriber details. For more information, see Remote Access.

Editing Remote Access details

Follow these steps to add the Remote Options details for a product type.

1. In the Edit Product Type screen, select the Remote Options option from the left hand list.

   Result: You see the Remote Options configuration options.

2. To enable access to the IVR system for subscribers with this product type, select the **Allowed** check box.

To disable access to the IVR system for subscribers with this product type, clear the Allowed check box.

Note: To access the IVR system, subscribers must also have the Remote Access check box selected in their Subscriber details. For more information, see Remote Access.

Friends and Destination

The Friends and Destination option defines charging for the friends and destination service.

For more information about the Friends and Destination feature, see Friends and Family/ Destination Discount Configuration.

Friends and Destination fields

This table describes the function of each field.

Field	Description
Total Discount %:	The total discount for dialed numbers falling within the subscriber's Friends & Destination prefix.
Free changes allowed:	The maximum number of free changes the subscriber can make to their Friends & Destination configuration.

Adding Friends and Destination details

Follow these steps to add the Friends and Destination charging details for a product type.

1. In the New Product Type screen, select the Friends and Destination option from the left hand list.

   Result: You see the Friends and Destination configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Friends and Destination fields.

Editing Friends and Destination details

Follow these steps to view or change the Friends and Destination details for a product type.

1. In the Edit Product Type screen, select the Friends and Destination option from the left hand menu.

   Result: You see the Friends and Destination options.

2. Check or update the Friends and Destination details as necessary.

   For more information about the fields in this option, see Friends and Destination fields.

Friends and Family

The Friends and Family configuration defines some details about how the friends and family feature works with this product type.

For more information about the Friends and Family feature, see Friends and Family/ Destination Discount Configuration.

Friends and Family fields

This table describes the function of each field.

Field	Description
Total Discount %:	The total discount applied to calls made to the subscriber's Friends & Family numbers. **Note:** This percentage is distributed evenly amongst all Friends & Family numbers.
Free changes allowed:	The maximum number of free changes the subscriber can make to the Friends & Family configuration.
Maximum F&FD Numbers allowed:	The maximum number of Friends & Family entries the subscriber can add to their Friends & Family list.

Adding Friends and Family details

Follow these steps to add the Friends and Family details for a product type.

1. In the New Product Type screen, select the Friends and Family option from the left hand list.

   Result: You see the Friends and Family configuration options.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Friends and Family fields.

Editing Friends and Family details

Follow these steps to view or change the Friends and Family details for a product type.

1. In the Edit Product Type screen, select the Friends and Family option from the left hand menu.

   Result: You see the Friends and Family options.

2. Check or update the Friends and Family details as necessary.

   For more information about the fields in this option, see Friends and Family fields.

Promotional Destination Rates

The Promotional Destination Rates option provides configuration for discounting short messages.

Promotional Destination Rates fields

This table describes the function of each field.

Field	Description
Threshold	The number of non discounted short messages which must be sent before the discount will be applied.
Discount Rate	The percentage of discount which will be applied to qualifying short messages.

Adding Promotional Destination Rate details

Follow these steps to add Promotional Destination Rates to a product type.

1. In the New Product Type screen, select the Promotional Destination Rates option from the left hand list.

   Result: You see the Promotional Destination Rates configuration options.

2. Click **New**.

   Result: You see the New Promotional Destination Discount screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Promotional Destination Rates fields.

4. Click **Save**.

   Result: Your changes will be temporarily saved and will be displayed in the New Product Type screen.

Editing Promotional Destination Rate details

Follow these steps to view or edit Promotional Destination Rates to a product type.

1. In the Edit Product Type screen, select the Promotional Destination Rates option from the left hand list.

   Result: You see the Promotional Destination Rates configuration options.

2. Click **Edit**.

   Result: You see the New Promotional Destination Discount screen.

3. Check or update the Promotional Destination Discount details as necessary.

   For more information about the fields in this option, see Promotional Destination Rates fields.

4. If you have made changes to the promotional destination rate's details, click **Save**.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

   If you do not want to make changes to the promotional destination rate details, click **Cancel**.

Deleting Promotional Destination Rule details

Follow these steps to delete a Promotional Destination Rule from a product type.

1. In the Edit Product Type screen, select the Promotional Destination Rules option from the left hand menu.

   Result: You see the Promotional Destination Rules configuration options.

2. In the Promotional Destination Rules table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

4. If required, repeat steps 2 and 3 until all the Promotional Destination Rules to delete have been deleted.

Cumulative Balances

The Cumulative Balances option configures the default cumulative balance plan for a product type. The cumulative balance plan defines the set of cumulative balance categories for which announcements can be played using the Cumulative Balances feature node.

For more information about the Cumulative Balances node, see *Feature Nodes Reference Guide*. For details on configuring cumulative balance plans, see Cumulative Balance Plans.

Note: Balances that have not been assigned to a cumulative balance category cannot be played by the node.

Configuring the cumulative balances option

Follow these steps to configure the default cumulative balance plan for a Product Type.

1. In the New\Edit Product Type screen, select the Cumulative Balances option from the left hand list.

   Result: You see the Cumulative Balances configuration options.

2. From the **Cumulative Balance Plans** drop down list, select the default cumulative balance plan for the Product Type. The balance categories defined for the plan will be used by the Cumulative Balances node to play cumulative balance announcements.

   Notes:

   - The default value can be overridden by specifying a value in the node.
   - If None is selected, this indicates there is no default cumulative balance plan associated with the Product Type.
   - Cumulative balance plans and cumulative balance categories are configured in the Wallet Management screen.

Real-Time Wallet Notifications

The Real-Time Wallet Notifications option enables real-time wallet notifications for a Product Type. The real-time wallet notifications listed in this option will apply to all wallets with this Product Type.

Notes:

- This functionality is only available where Rating Management is handled by the VWS.
- For details on defining the criteria used for generating real-time notifications, see Adding real-time wallet notifications.

Real-Time Wallet Notifications fields

This table describes the function of each field.

Field	Description
Real-Time Notifications List	Displays all real-time wallet notifications enabled for this product type.
Available Notifications	Displays real-time wallet notifications available for adding to this product type. This field is populated by the Real-Time Wallet Notifications tab on the Wallet Management screen. For more information about this tab, see Real-Time Wallet Notifications.

Editing real-time wallet notification details

Follow these steps to view or change the Real-Time Wallet Notifications which are active for a Product Type.

1. In the Edit Product Type screen, select the Real-Time Wallet Notifications option from the left hand list.

   Result: You see the Real-Time Wallet Notifications options.

2. Check or edit the **Real-Time Notifications List**.
   - To add a notification, select the one you want from the **Available Notifications** drop down list, and click **Add**.
   - To delete a notification, select the one you want to delete in the list, and click **Delete**.

   For more information about the fields, see Real-Time Wallet Notifications fields.

3. If you have made changes to the product type's details, click **Save**.

   If you do not want to make changes to the product type's details, click **Cancel**.

Periodic Charges

The Periodic Charges option configures:

- which periodic charges can be applied to subscribers who have a wallet which uses this product type, and
- (optionally) which ccsPeriodicCharge process should process which periodic charges.

For more general information about periodic charges, see Subscription Services.

Periodic Charges fields

This table describes the function of each field.

Field	Description
Periodic Charge	Displays all periodic charges enabled for this product type. **Note:** The default system setting allows assigning a maximum of 15 periodic charges per product type. To change the number of periodic charges per product type allowed in the NCC UI, set the **MaxProductTypePeriodicCharges** applet parameter to the desired number of charges in the **sms.jnlp** file. See the section on setting up the screens in *Charging Control Services Technical Guide* for more information.
Apply To Activating	Whether or not this periodic charge should be automatically applied to all subscribers who activate a wallet with this product type.
Apply To Existing	Whether this periodic charge should be automatically applied to all existing subscribers who currently have this product type.
Available Charges	Displays periodic charges which can be added to this product type.
Daemon	The ccsPeriodicCharge daemon process id which should process periodic charges from this group. **Note:** You can have 1 - 5 daemons running. The number is set by the numbers configured on this screen. The highest number available to select will be one more than the current highest set number across a service provider's products, with a maximum of 5. So if: • none yet set, the maximum is 1 • "1" is already set, maximum is 2 • "2" is already set, maximum is 3 • "3" is already set, maximum is 4 • "4" is already set, maximum is 5 • "5" is already set, maximum is also 5 For more information about the ccsPeriodicCharge process, see *CCS Technical Guide*.

The records and details shown in these fields are populated by the **Periodic Charges** tab for this service provider. For more information about managing periodic charges, see Wallet Management - Periodic Charges.

Editing applicable periodic charges

Follow these steps to view or change the periodic charges which are active for a Product Type.

1. In the Edit Product Type screen, select the Periodic Charges option from the left hand list.

   Result: You see the Periodic Charges options.

2. Check or edit the **Periodic Charges List**.

   - To add a periodic charge, select the one you want from the **Available Charges** drop down list, and click **Add**.
   - To delete a periodic charge, select the one you want to delete in the list, and click **Delete**.
   - To move a periodic charge up the list, select it from the Periodic Charges List and click **Up**.
   - To move a periodic charge down the list, select it from the Periodic Charges List and click **Down**.

   For more information about the fields, see Periodic Charges fields.

3. If you want to balance the load of processing periodic charges by assigning different periodic charges to more than one ccsPeriodicCharge process, select a ccsPeriodicCharge process id from the **Daemon** field.

   The ccsPeriodicCharge with this id will process the selected periodic charge.

4. If you have made changes to the product type's details, click **Save**.

   If you do not want to make changes to the product type's details, click **Cancel**.

Adjustments

Adjustment option configuration sets the limits for balance type Adjustments for a new Product Type. The Adjustments will apply to all Wallets with this Product Type. A further limit can be set for individual users. The limits set at the user level take precedence over the limits set for the Product Type.

On the Adjustment Users tab in the New/Edit Adjustment screen you can configure the minimum and maximum balance type adjustments allowed for specified users. You can add, edit, and delete adjustment amounts for individual users for the balance type selected on the Adjustment tab.

Note: This functionality is only available where Rating Management is handled by the VWS Voucher and Wallet Server.

Adjustments fields

This table describes the function of each field.

Field	Description
Balance Type	The balance type these adjustment limits apply to.
Min Amount	The minimum value for an adjustment to the balance. Specify minor units for currency amounts and seconds for time amounts. **Tip:** To specify a negative value, type the minus sign (-) in front of the amount.

Field	Description
Max Amount	The maximum value allowed for an adjustment to the balance. **Note:** The value for Max Amount must be greater than the value for Min Amount.

Adding Adjustment details

Follow these steps to add Adjustment limits to a product type.

1. In the New Product Type screen, select the Adjustments option from the left hand list.

   Result: You see the Adjustments configuration options.

2. Click **New**.

   Result: You see the New Adjustment screen, **Adjustment** tab.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Adjustments fields.

4. To configure adjustment limits for the balance type for specific users, select the **Adjustment Users** tab.

   Result: You see the Adjustment Users table on the tab.

5. Configure user adjustments as required. For details see:
   - Adding user adjustment limits
   - Editing user adjustment limits, and
   - Deleting user adjustment limits.

6. Click **Save**.

Editing Adjustments details

Follow these steps to edit the Adjustment limits configured for a product type.

1. In the Edit Product Type screen, select the Adjustments option from the left hand list.

   Result: You see the Adjustments configuration options.

2. In the Adjustments table, select the record to change and click **Edit**.

   Result: You see the Edit Adjustment screen, **Adjustment** tab.

3. Check or update the Promotional Destination Discount details as necessary.

   For more information about the fields in this option, see Adjustments fields.

4. To modify the adjustment limits configured for specific users, select the **Adjustment Users** tab.

   Result: You see the Adjustment Users table on the tab.

5. Configure user adjustments as required. For details, see:
   - Adding user adjustment limits

- Editing user adjustment limits
- Deleting user adjustment limits

6. Click **Save** to save the configuration and return to the Edit Product Type screen.

   If you have made changes to the adjustment's details, click **Save**.

   Result: Your changes will be temporarily saved and will be displayed in the Edit Product Type screen.

   If you do not want to make changes to the adjustment details, click **Cancel**.

Related topic

Adjustments

Deleting adjustments

Follow these steps to delete adjustment configuration from a product type.

Note: When you delete the adjustment configuration for a balance type, the associated user adjustment configuration will also be deleted.

1. In the Edit Product Type screen, select the Adjustments option from the left hand list.

   Result: You see the Adjustments configuration options.

2. In the Adjustments table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

Related topic

Adjustments

Adding user adjustment limits

Follow these steps to add balance type adjustment limits for a selected user.

1. In the New/Edit Adjustment screen, select the Adjustment Users tab and click **New**.

   Result: You see the New User Adjustment screen.

   Note: The **Balance Type** field is for information only and cannot be changed in this screen. It displays the balance type that this configuration will apply to.

2. From the **User Name** drop down list, select the user for whom to define adjustment limits.
3. In the **Min Amount** field type the minimum value for a balance type adjustment. Specify minor units for currency amounts and seconds for time amounts.

   Tip: To specify a negative value, type the minus sign (-) in front of the amount.

4. In the **Max Amount** field type the maximum value allowed for adjustment to the balance.

   Note: The value for Max Amount must be greater than the value for Min Amount.

5. Click **Save**.

   Result: You are returned to the New/Edit Adjustment screen.

6. Click **Save** to save the configuration.

Related topic

Adjustments

Editing user adjustment limits

Follow these steps to edit balance type adjustment limits for a selected user.

1. In the New/Edit Adjustment screen, select the Adjustment Users tab.
2. Highlight the record to edit on the table and click **Edit**.

   Result: You see the Edit User Adjustment screen.

   Note: The **Balance Type** field is for information only and cannot be changed in this screen. It displays the balance type that this configuration will apply to.
3. If required, select a different user from the **User Name** drop down list.
4. If required, in the **Min Amount** field type a different minimum value for adjustments to the balance.
5. If required, in the **Max Amount** field type a different maximum value allowed for adjustments to the balance.

   Note: The value for Max Amount must be greater than the value for Min Amount.
6. Click **Save**.

   Result: You are returned to the New/Edit Adjustment screen.
7. Click **Save** to save the configuration.

Related topic

Adjustments

Deleting user adjustment limits

Follow these steps to delete the adjustment limits configured for a specified user and balance type.

1. Select the **Adjustment Users** tab in the New/Edit Adjustment screen.

   Result: You see a list of user adjustment limits in the table.
2. In the table, highlight the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

   Result: The record is deleted and you are returned to the New/Edit Adjustment screen.
5. Click **Save** to save your changes.

Related topic

Adjustments

Wallet Life Cycle

The WLC option is available only if the WLC service is installed.

You configure Wallet Life Cycles on a Product Type basis.

Selecting the current WLC plan

Follow these steps to select a Wallet Life Cycle Plan for a product type.

1. In the Edit Product Type screen, select the Wallet Life Cycle option from the left hand list.

   Result: You see the Wallet Life Cycle Plan configuration option.

2. Select the current WLC Plan from the drop down list.

   Note: By selecting `None` you disassociate the current WLC Plan without associating another WLC PLan.

3. Click **Save**.

   Result: If you save a different WLC Plan to the one currently saved for the Product Type, then there will be an impact for all Subscribers currently assigned to the Product Type. The system will disassociate them from the old WLC Plan (if any) and associate them to the new WLC Plan (if any). This operation will be performed next time the Subscriber's Wallet is accessed or when the Subscriber's bucket expired and is grovelled by beGroveller or when the wallet is grovelled by the ccsSLEEChangeDaemon process.

Discounts

The Discounts option is used to set the discounts applied to a Product Type Bypass Number.

Note: To enable the discount, you must include the Set Discount node in the control plan. For details on how to configure the node, see the Set Discount feature node in *Feature Nodes Reference Guide*.

Editing discounts

Follow these steps to view or change the discounts which are applied to a bypass number for a product type.

1. In the Edit Product Type screen, select the Discounts option from the left hand list.

   Result: You see the Discounts option.

2. Select the currency code which the maximum charge will be displayed in from the **Display Currency** drop down box.
3. Type the percentage which will be discounted during the first discount period in the **Period One %** field.
4. Type the percentage which will be discounted during the second discount period in the **Period Two %** field.
5. Type the maximum total charge the subscriber will be charged for any one call in the **Max. Charge** field.
6. If you have made changes to the product type's details, click **Save**.

   If you do not want to make changes to the product type's details, click **Cancel**.

Subscriber Profile Limitations

You can set Product Type limits for LNSTRING and LOPREFIX profile field types. The limits set here override the limits set in the Service Management, Resource Limits screen.

Profile groups

The profile fields for which you can set limits are available from the Subscriber Profile Limitations folder in the left hand panel in the Edit Product Type screen. Each group listed in the Subscriber Profile Limitations folder contains the limited profile fields that have been added to that Subscriber group through the SPM. If a field has been added to more than one group then it will be listed more than once.

Note: For more information on:

- Configuring profile fields in ACS, see the *ACS User's Guide*
- Using the SPM to add profile fields to a Subscriber group, see the *SPM User's Guide*

Editing profile field limitations - lnstring

Follow these steps to set the limits for a product type for a selected profile field where the field type is LNSTRING.

Tip: You can configure service provider limits for profile fields in the **Service Management**>Edit Resource Limits screen.

1. From the left hand list in the Edit Product Type screen, expand the Subscriber Profile Limitations group containing the LNSTRING field you want.
2. Select the LNSTRING field in the group.

   Result: You see the LNSTRING profile field limitations configuration options.
3. Select the **Ignore Limitations** check box, if required:
   - When selected, the limits set for the product type are ignored and the resource limits are used.
   - When not selected, the limits set here for the product type are used.
4. In the **Min Number Length** field, enter the minimum numeric value for the profile field. Defaults to zero if no value is specified.
5. In the **Max Number Length** field, enter the maximum numeric value for the profile field. Defaults to 255 if no value is specified.
6. Select the **Limitation Prefix Tree Type** from the drop down list. If you select:
   - Allowed – The profile field value must match an entry in the number list.
   - Barred – The profile field value must not match an entry in the number list.
7. Edit the **Number List**. To:
   - Add to the list,
     – Enter a required number in the **New Number** field

  - Click **Add**.
- Delete from the list
  - In the **Number List**, select the number
  - Click **Delete**.

8. Repeat step 7 until all the numbers you want are included.
9. Click **Save**.

Related topic

Subscriber Profile Limitations

Editing profile field limitations - loprefix

Follow these steps to set the limits for a Product Type for a selected profile field where the field type is LOPREFIX.

Tip: You can configure Service Provider limits for profile fields in the Service Management>Edit Resource Limits screen.

1. From the left hand list in the Edit Product Type screen, expand the Subscriber Profile Limitations group containing the LOPREFIX field you want.
2. Select the LOPREFIX field in the group.

   Result: You see the LOPREFIX profile field limitations configuration options.
3. Tick the **Ignore Limitations** check box, if required:
   - When selected, the limits set for the product type are ignored and the resource limits are used.
   - When not selected, the limits set here for the product type are used.
4. In the **Max Number of Entries** field, type the maximum number of prefixes that may be included in the Number List. Defaults to 100 if no value is specified.
5. In the **Min Number Length** field, type the minimum numeric value for the LOPREFIX field. Defaults to zero if no value is specified.
6. In the **Max Number Length** field, type the maximum numeric value for the LOPREFIX field. Defaults to 255 if no value is specified.
7. Select the **Limitation Prefix Tree Type** from the drop down list. If you select:
   - Allowed – The LOPREFIX field value must match an entry in the Number List.
   - Barred – The LOPREFIX field value must not match an entry in the Number List.
8. Edit the **Number List**. To:
   - Add to the list: Type a required number in the **New Number** field and then click **Add**.
   - Delete from the list: In the **Number List**, select the number, and then click **Delete**.
9. Repeat step 8 until all the numbers you want are included.
10. Click **Save**.

Related topic

Subscriber Profile Limitations

Profile Fields

You can configure the profile fields that have been added to the product type through the SPM. The available profile fields are listed by product type group in the Profile folder in the Edit Product Type screen.

Note: Profile field tags are configured in ACS. The SPM can then be used to add the profile fields to a group in the Edit Product Type screen. For more information on:

- Setting up profile fields in ACS, see *ACS User's Guide*.
- Using the SPM to add profile fields to the product type groups, see the *SPM User's Guide*.

Configuring profile fields

Follow these steps to configure the profile fields in a selected product type group.

1. From the left hand menu in the Edit Product Type screen, select the **Profile** group you want to configure.

   Result: The available profile fields are displayed in the screen.

   Tip: If the profile groups are not currently visible, double click the **Profile** folder in the left hand menu to expand it.
2. Edit the profile field data entry boxes.
3. Click **Save**.

Related topic

Profile Fields

Copying Product Types

You can copy product types on the **Product Type** tab. This facility creates a new product type by copying all the configuration details from a selected product type to a new product type name. Once the new product type has been created, you can edit its configuration in the Edit Product Type screen.

Copying a product type configuration

Follow these steps to copy a selected product type configuration to a new product type.

1. In the Subscriber Management screen, select the **Service Provider** from the drop down box.
2. From the **Product Type** tab, select the Product Type to copy.
3. Click **Copy**.

   Result: You see the Input New Product Type Name screen.
4. Type in the name of the product type to be created.
5. Click **OK**.

Result: The configuration for the selected product type is copied to the new product type. The **Product Type** tab is refreshed and the copied product type appears in the list of product types.

4

Wallet Management

This chapter explains how to configure the components used to manage wallets.

Warning: The Wallet Management screens are only available if the Rating Management module has been installed on your system and if you are using the VWS domain. If you are using a third party domain, then you will not be able to access these screens.

This chapter contains the following topics.

Wallet Management Module

Tracker Plans

Balance Units

Balance Types

Currency to Announcement Maps

Balance Type Translations

Rewards

Reward Product Translations

Wallet Name Translation

Real-Time Wallet Notifications

Policy Counters

Free Form Recharge

Wallet Life Cycle

Bonus Types

Bonus Values

Cumulative Balance Plans

Periodic Charge Groups

Wallet Management Module

The Wallet Management screen lets you configure components of wallets. It contains the following tabs which are covered in the chapter:

- Balance Type Translations
- Balance Types
- Balance Units
- Bonus Types

- Bonus Values
- Cumulative Balance Plans
- Free Form Recharge
- Real-Time Wallet Notifications
- Reward Product Translations
- Rewards
- Tracker Plans
- Wallet Life Cycle
- Wallet Name Translation

In addition it contains the **Periodic Charges** tab. This tab is covered in the Wallet Management - Periodic Charges chapter.

Accessing the Wallet Management screen

Follow these steps to open the Wallet Management screen.

1. Select the **Services** menu from the Service Management System main screen.
2. Select **Prepaid Charging > Wallet Management**.

   Result: You see the Wallet Management screen.

Tracker Plans

The **Tracker Plans** tab lets you add, modify or delete tracker plans.

A tracker plan is associated to an expenditure plan. It sets a preference for recharging a certain balance type depending on the rules defined by the expenditure plan. Operators can use tracker plans during promotions when they want to:

- Define counters which track a subscriber's usage or expenditure within a configured promotion period
- Reward the subscriber based on their expenditure, either in real time or at the end of the period

Each counter is linked to a service (such as voice calls or SMS) and a configured rating scenario consisting of the following:

- A corresponding balance type
- Period of promotion (daily, weekly, monthly or yearly)
- The amount of activity (cash, time or number of events) which will trigger the reward

When each service and rating scenario is defined, the counters which should be updated are chosen. This gives the operator full control over which services will be used as part of the promotion.

Tracker Plan fields

This table describes the function of each field.

Field	Description
Name	A unique name for the tracker plan.
Tracker Plan	Indicates the expenditure plan that determines which balance types are tracked for promotion rewards.
Bearer	Selecting this check box allows you to select the type of service to which the tracking plan applies.
Channel	Selecting this check box allows you to select the method of recharge to which the tracking plan applies.
Reference	Selecting this check box enables a text box where you can enter a short description of the tracking plan.

Note: The bearer, channel or reference values are matched during voucher recharge. If they are not set, the voucher will be recharged using standard voucher information.

Adding tracker plans

Follow these steps to add a new tracker plan.

1. In the Wallet Management screen, select the service provider from the drop down box.
2. On the **Tracker Plans** tab, select the balance type to which the new tracker plan will be linked.
3. Click **New**.

   Result: You see the New Tracker Plan screen.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tracker Plan fields.
5. When you have completed configuring the new tracker plan, click **Save**.

Related topic

Tracker Plans

Editing tracker plans

Follow these steps to edit an existing tracker plan.

1. In the Wallet Management screen, select the service provider from the drop down box.
2. On the **Tracker Plans** tab, select the balance type to display all associated tracker plans.
3. In the table, select the record to edit and click **Edit**.

   Result: You see the Edit Tracker Plan screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Tracker Plan fields.
5. Click **Save**.

Related topic

Tracker Plans

Deleting tracker plans

Follow these steps to delete an existing tracker plan.

1. In the Wallet Management screen, select the service provider from the drop down box.
2. On the **Tracker Plans** tab, select the balance type to display all associated tracker plans.
3. In the table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Tracker Plans prompt.
5. Click **OK**.

Balance Units

This screen enables you to view, add, edit and remove balance units.

Balance units are the type of unit used in balance types. Balance units are either cash or non-cash. Non-cash units include:

- Notifications
- Bad PIN counts,
- Promotional Counters
- Time
- Data.

Note: The functionality that uses time balance units is only available if you have the appropriate license.

Topics:

Adding balance units

Editing balance units

Deleting balance units

Adding balance units

Follow these steps to add a new balance unit.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Units** tab, click **New**.

   Result: You see the New Balance Unit screen.
3. In the **Name** field, enter the name of the balance unit.
4. Click **Save**.

Related topic

Balance Units

Editing balance units

Follow these steps to edit an existing balance unit.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Units** tab, select the balance unit you want to edit.
3. Click **Edit**.

   Result: You see the Edit Balance Unit screen.
4. Edit the details as described in Adding balance units.
5. Click **Save**.

Related topic

Balance Units

Deleting balance units

Follow these steps to delete an existing balance unit.

Warning: If you delete a balance unit which is associated with a balance type, your system may become unstable.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Units** tab, select the balance unit to delete.
3. Click **Delete**.

   Result: A Delete Confirmation screen appears, similar to that shown below. The type of balance unit shown in the screen will depend on the name of the unit you are deleting.
4. Click **OK**.

   Result: The record will be deleted from the database.

Related topic

Balance Units

Balance Types

The **Balance Types** tab on the Wallet Management screen allows you to view, add, and edit balance types.

Note: The units used for balance types can be either cash, time, data, or units.

Topics:

Balance type categories

Cross balance types

Expenditure balance types

Expenditure expiry dates

Distributed wallet balances

Maximum balances

Maximum balance policy

Quota Notifications

Balance Types help

Balance Type screen

Balance Type Details fields

Balance Type Announcements fields

Quota Notifications fields

Adding balance types

Editing balance types

Deleting balance types

Balance type categories

This table describes the different categories of wallet balance types.

Balance Type	Description
Chargeable Balance	Holds the balance types used to cover charges to subscribers. For example: General Cash. These are the only balances that can contribute to expenditure.
Cross Balance	Used to apply a cross balance discount to calls that have a cash charge.
Expenditure Balance	Used to accrue daily, weekly, monthly, annual, and total wallet expenditure. Expenditure is calculated based on charges applied to chargeable wallet balance types that have the 'Contributes to Expenditure Plans' flag set.
Fraud Balance	Holds fraud balance types. For example: Bad PIN balances.
Internal Balance	Used by the system for internal accounting purposes. Any balance type that is not chargeable, cross, expenditure, or fraud should be set to internal.
Quota Balance	Used to accrue data quotas. As part of a multi-tariff rating definition, it can then be used to track, and limit, the use of another charging balance cascade.

Cross balance types

The cross balances are collected into cross balance type cascades. Charges against the subscriber's wallet also debit the cross balances in the cross balance cascade. As each cross balance reaches zero, the debit passes to the next cross balance. The discount which applies is the discount configured for the cross balance which is highest in the cross balance cascade and has a positive balance.

Each cross balance type cascade applies to the CLI-DNs which include it in their configuration.

Charges from CLI-DNs are cumulative. For more information about cross balance type cascades, see Cross Balance Type Cascades. For more information about CLI-DNs, see CLI-DN.

Expenditure balance types

Expenditure balance types can have one of the following expenditure types:

- Daily
- Weekly
- Monthly
- Yearly
- Wallet

Monthly, yearly, and wallet are always installed, but daily and weekly are only available if you have the Promotion Manager license.

All other balance types must have the **Expenditure Type** field set to `None`. Expenditure is updated by expenditure against chargeable balances which:

- Have the 'Contributes to Expenditure Plans' flag set to 'Y'
- Are included in an expenditure plan which is included in a CLI-DN or named event

Expenditure balance types are also used as a basis for calculating promotions.

Expenditure expiry dates

The expiry date for an expenditure balance is first set when the wallet is activated and then reset when the balance expires. The date set will depend on the expenditure type and the date basis used.

The date basis determines which day of the month and month of the year is assigned to the balance. The options are:

- Balance creation date (default)
- Fixed date
- Wallet activation date
- Wallet expiry date

The expenditure type determines the period used to extend the expiry date. When the expenditure type is:

- Daily, the expiry date will be extended by one day
- Weekly, the expiry date will be extended by seven days
- Monthly, the expiry date will be extended by one month
- Yearly, the expiry date will be extended by one year
- Wallet, the expiry date will be extended to match the current expiry date for the wallet

Example 1

If you set the expiry date calculation basis to 'Fixed Date' for a monthly expenditure balance type, then the specified day of the month will be used to extend the expiry date.

Example 2

If you set the expiry date calculation basis to 'Wallet Activation Date' for a yearly expenditure balance type, then the day and month of the year the wallet was activated will be used to extend the expiry date.

Distributed wallet balances

If the wallet has been distributed across separate charging and tracking domains, then you may not be able to edit all wallet balances through the Edit Subscriber screen. If the wallet has been configured to use:

- A VWS domain for charging and tracking, you will be able to view and edit all wallet balances
- A third party charging domain and no tracking domain, you will not be able for view or edit any wallet balances
- A third party charging domain and a VWS tracking domain, you will only be able to view or edit expense and fraud balances

Maximum balances

You can set a maximum balance value for a balance type. If set, then this value may not be exceeded when a wallet is recharged or updated.

When applying a wallet recharge or update, the maximum balance value will be evaluated against currently available balances only. Any offset balances defined for the wallet will not be included in the total balance value.

Note: This functionality is applicable to prepaid balance types only.

Maximum balance policy

You can specify the policy to associate with the maximum balance value. This table describes the available policy options.

Policy	Description
Limit Additional Credits	A wallet recharge or wallet update will be restricted to the maximum balance value configured for the balance type for all applicable balances. Any unused balance values will be recorded in the EXCEEDED_BALANCE_TYPES and EXCEEDED_VALUES tags in the resulting VWS EDR.
Reject Credits Over	The default option. You will not be able to apply a wallet recharge or update which would exceed the maximum value configured for any of the balance types in the wallet. This will result in failure and no balances will be updated or recharged. The balance types causing the failure will be recorded in the FAILED_BALANCE_TYPES tag in the resulting VWS EDR.

Quota Notifications

You can define quota notifications that will be sent to users when their balance breaches a configured threshold.

On the **Quota Notifications** tab, the following fields are displayed:

- Quota Notification 1
- Notification
- Threshold (%)

The **Quota Notifications** tab enables you to define up to three quota notifications per service provider. For each quota notification, you define the notification to send and the threshold value.

Thresholds are a percentage of the used quota that is in the Quota Tag Set profile fields. When a subscriber's balance breaches a quota of the specified threshold, the defined notification is sent.

For example, if the quota retrieved from the Quota Tag Set Profile field is 50% and the threshold value is 1000 (£10.00), the notification is sent when the subscriber's balance reaches 50% of the defined threshold value, £5.00.

The thresholds apply to all subscribers. However, they can be customized at the subscriber level by using the PI command to set the **Quota Value** and **Quota Threshold** profile fields.

See *CCS Provisioning Interface Commands* for more information about using PI commands to change subscriber profile fields.

Balance Types help

For help with a new Balance Type screen, see Adding balance types.

For help with editing an existing Balance Type screen, see Editing balance types.

Related topic

Balance Types

Balance Type screen

The New Balance Type and Edit Balance Type screens contain tabs which enable you to configure:

- Balance Type Details
- Balance Type Announcements
- Quota Notifications

Balance Type Details fields

This table describes the function of each field on the **Balance Type Details** tab.

Field	Description
Name	Enter the name of the balance type. This field is required.
Unit	The balance unit associated with this balance type. The drop-down list displays all available balance units. **Note:** For more information about configuring balance units, see Balance Units.
Default Type	Indicates if the unit selected in the **Unit** field is the default cash balance type. **Tip:** Only one balance type in CCS should be set as the default type.
Display to Spend Ratio	The ratio value applied to this balance type. This increases the value of this balance type by the entered value when it is used within a rating solution. **Notes:** • Valid range is 0 to 9.99. The default value is 1.00. • This value can only be entered when `the expenditure type` is set to `None`.
Delete After Last Bucket Expiry	Select this check box to delete this balance type when the last bucket expires. **Note:** You may not set this option for fraud balances or the default balance type (normally the General Cash balance type).
Exclude from Creation	Select this check box to exclude this balance type from all new wallets when they are created. Deselecting this check box adds this balance type to all newly created wallets.

Field	Description
Play Announcement if Zero Balance	Select this check box to play an announcement to the caller when the caller's balance is zero. **Tip:** This configuration option is used by feature nodes that inform a subscribers about their balances.
Category	Indicates if the balance type is: • Chargeable • Cross • Expenditure • Fraud • Internal • Quota For more information about balance type categories, see Balance type categories. **Notes:** • The `Quota Balance` option is available only to users with **Quota Balances** SMS permission. • When the quota balance is selected, the **Primary Quota tag Set** and **Secondary Quota Tag Set** fields and the **Quota Notifications** tab become available.
Primary Quota Tag Set	Select the quota limit value for the primary wallet. **Note:** This is available when **category** is set to `Quota Balances`.
Secondary Quota Tag Set	Select the quota limit value for secondary wallet.
Allow Credit	Select this check box if this balance type can have a credit limit. Credit limits are configured in the Convergent Charging, Subscriber Management, Wallets screen.
Expenditure Type	If **Category** is set to **Expenditure Balance**, set this field to how frequently the balance is reset to zero. **Notes:** • If **Category** is set to **Expenditure Balance**, this field is required. • If this balance type is used in a reward that has the **Reset Counte**r field selected, the period may be overridden.

Field	Description
Contributes to Expenditure Plans	Select this check box if charges against balances of this type can increase expenditure balances. **Notes:** • To contribute to the expenditure balance, the charging mechanism (CLI-DN or named event) must specify an expenditure plan. The expenditure balances in the expenditure plan will be increased. • This check box is available for only if **Category** is set to **Chargeable Balances**.
Include in Reward Notification	Selecting this check box indicates that this balance type will be included in SMS notifications. **Note:** This check box is available for only if **Category** is set to Chargeable Balances.
Re-create Bucket on Expiry	Select this check box to recreate a bucket belonging to this balance type on expiry. **Note:** This check box is enabled only if **Category** is set to `Expenditure Balance`.
Delete After Last Bucket Expiry	Select this check box to delete balances of this type when the last bucket expires. **Note:** This check box is not enabled for fraud balances or the default balance types (the general cash balance type).
Cross Balance Type Discount %	The discount percentage to be applied for a cross balance type. **Notes:** • Valid range is 0 to 100.0000. • This discount will be applied to voice calls where the rating solution includes this cross balance type in a cross balance type cascade.
Max Balance	(Optional) sets the maximum value a balance of this type may have. May be set for these balance categories: • Balance Chargeable • Balance Cross • Balance Fraud In the cash field, type the required value in the units of the balance type and select the **Policy** to use from the drop down list. **Notes:** • For more information on maximum balances, see Maximum balances. • This field is available to help prevent fraud, and therefore recharges and wallet updates that would take the balance over the configured maximum may be rejected depending on the policy selected.

Field	Description
Expiry Date Calculation	Base the balance type expiry date for tracker balances on one of the following: • Fixed Date • Balance Creation Date • Wallet Expiry Date • Wallet Activation Date If you select `Fixed Date`, you must select the date using the date selector.

Balance Type Announcements fields

This table describes the function of each field on the **Balance Type Announcements** tab.

Field	Description
Name	Name of the balance type. This field is required and must be the same as for the **Balance Type Details** tab.
Expiry Announcement Set	The announcement set to play from when the subscriber's balance expires.
Expiry Announcement Entry	The announcement entry to play to the subscriber if their balance expires.
Single Day Expiry Announcement Set	The announcement set to play from when the subscriber's balance is due to expire in a day.
Single Day Expiry Announcement Entry	The announcement entry to play to the subscriber if their balance is due to expire in a day.
Positive Announcement Set	The announcement set to play from if the subscriber's non-cash balance is positive. **Note:** This field cannot be set if `Cash` is selected in the **Unit** field (**Balance Type Details** tab).
Positive Announcement Entry	The announcement entry to play to the subscriber if their non-cash balance is positive. **Note:** This field cannot be set if `Cash` is selected in the **Unit** field (**Balance Type Details** tab).
Negative/No Credit Announcement Set	The announcement set to play from if the subscriber's balance is negative or has no credit. **Note:** This field cannot be set if `Cash` is selected in the **Unit** field (**Balance Type Details** tab).
Negative/No Credit Announcement Entry	The announcement entry to play to the subscriber if their balance is negative or has no credit. **Note:** This field cannot be set if `Cash` is selected in the **Unit** field (**Balance Type Details** tab).

Quota Notifications fields

This table describes the function of each field.

Field	Description
Name	Name of the balance type.
Notification	Select the notification to send to the subscriber from the list.
Threshold (%)	The threshold at which a notification is sent to the subscriber. A maximum of three thresholds can be set. **Note:** Thresholds are the percent of the used quota in the profile location selected in the **Primary Quota Tag Set** and **Secondary Quota Tag Set** fields.The Threshold field gets enabled when you select the notification to send the subscriber.

Adding balance types

Follow these steps to add a new balance type.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Types** tab, click **New**.

   Result: You see the New Balance Type Screen, **Balance Type Details** tab.
3. Enter detail data in the available fields on this tab to configure this record.

   For more information about the fields on this tab, see Balance Type Details fields.

   Note: Some fields are unavailable depending on selections in other fields on this tab.
4. Select the **Balance Type Announcements** tab.
5. Configure the announcements from the a vailable drop down lists on this tab. For more information about the fields on this tab, see Balance Type Announcements fields.

   Note: Depending on the **Unit** selection (on **Balance Type Details** tab), some of these fields will be unavailable.
6. Click **New** to add, edit and delete a currency to announcement maps. See Currency to Announcement Maps.

   Tip: The **New** button will be available when the **Unit** is `Cash` (**Balance Type Details** tab).
7. Select the **Quota Notifications** tab.

   Note: This tab is only available when **Category** is set to `Quota Balance` on the **Balance Type Details** tab.

   For more information about the fields on this tab, see Quota Notifications fields.
8. For each quota notification, specify the quota notification thresholds by doing the following:.
   - From the **Notifications list**, select the notification to send.
   - In the **Threshold %** field, enter the threshold value.

Note: These notifications are sent to the subscriber when the thresholds set here have been breached. The thresholds are the percent of the used quota in the profile location selected in the **Primary Quota Tag Set** field and **Secondary Quota Tag Set** field.

Tip: When saved, the quota notification sets are sorted largest to smallest, so when adding a threshold value, any of the sets can be used. However the notifications are sent in ascending percentage order.

For example; thresholds for 60, 30 and 90 percent are set in that order, after saving, the list will be in 90, 60 and 30 order, but the first notification is sent after 30% of quota has been used, a second when 60% and a third after 90%.

9. Click **Save**.

Related topic

Balance Types

Editing balance types

Follow these steps to edit an existing balance type.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Types** tab, select the balance type to edit from the table.
3. Perform one of the following:
   - Click **Edit**
   - Double-click on the record

   Result: You see the Edit Balance Type Screen.
4. Edit the fields with the required changes on the **Balance Type Details** tab.

   For information about the available fields, see Balance Type Details fields.
5. Edit the fields with the required changes on the **Balance Type Announcements** tab.

   For information about the available fields, see Balance Type Announcements fields.
6. If the balance unit is `Cash`, you can add, edit and delete a currency to announcement map for Positive and Negative/No Credit announcements. See Currency to Announcement Maps.
7. If the **Category** of the balance type is `Quota Balance`, you can configure notifications for the quota on the **Quota Notifications** tab.

   For information about the available fields, see Quota Notifications fields.
8. Click **Save**.

Related topic

Balance Types

Deleting balance types

To ensure ongoing stability between CCS and the VWS, the delete function for balance types is not available.

Related topic

Balance Types

Currency to Announcement Maps

As part of setting up a balance type, you can configure currency to announcement maps. Announcements are used in the Cumulative Balances feature node.

Topics:

Adding a currency to announcement map

Editing a currency to announcement map

Deleting a currency to announcement map

Adding a currency to announcement map

Follow these steps to add a currency to announcement map for a cash unit balance type.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.
2. Click **New**.

   Result: You see the Currency to Announcement Mapping screen.
3. From the **Currency One** drop down box, select the primary currency this balance type will use.
4. If this service provider has a second currency configured, select the second currency from the **Currency Two** drop down box.
5. From the **Positive Announcement Set** drop down box, select the announcement set which contains the announcement entry which should be played to the subscriber if their balance is positive.
6. From the **Positive Announcement** drop down box, select the announcement entry which should be played to the subscriber if their balance is positive.
7. From the **Negative Announcement Set** drop down box, select the announcement set which contains the announcement entry which should be played to the subscriber if their balance is negative.
8. From the **Negative Announcement** drop down box, select the announcement entry which should be played to the subscriber if their balance is negative.
9. Click **Save** to save the changes to the database and return to the Balance Type screen. The mapping will appear in the table.

Editing a currency to announcement map

Follow these steps to edit a currency to announcement map for a cash unit balance type.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.
2. Select a mapping from the table and click **Edit**.

   Result: You see the Currency to Announcement Mapping screen.

3. Edit the details, as described in Adding a currency to announcement map.
4. Click **Save**.

Deleting a currency to announcement map

Follow these steps to delete a currency to announcement map for a cash unit balance type.

1. Open the Balance Type screen for an existing cash unit balance type, as described in steps 1-3 of Editing balance types.
2. Select a mapping from the table and click **Delete**.

   Result: You see the Delete Confirmation prompt.
3. Click **OK** to remove the mapping and return to the Balance Type screen.

Balance Type Translations

The **Balance Type Translations** tab lets you view, add, edit and remove translations of balance types. All SMS Notifications which include balance amounts use these translations. Short messages which use this method of displaying balances include:

- Short messages generated by the Call Info Text Message feature node
- Reward notification short messages
- Recharge confirmation short messages.

Notes:

- If your system lets you specify time costs, then you can define translations for time balance messages. The time balances are displayed in both seconds and in minutes and seconds. This functionality is only available if you have the appropriate license.
- If no translations of a balance type are provided here for a language, no references to that balance type will be displayed in any short message generated in that language.

Message values

Cash balances

Cash balances in a notification have this format:

[Translated Balance Type Name] [Currency Code][Wallet Balance] [Separator]

where

- [Translated Balance Type Name] is entered in the **Translated Name** field
- [Currency Code] is the default currency's currency code
- [Wallet Balance] is the subscriber's currency wallet balance
- [Separator] is the character, entered in the **Separator** field, used to separate the main units of the balance value from its sub units.

Example: If the translated name is 'Gen' and the separator is '.', then the translated short message will be:

Non cash balance messages

A non cash balance notification has this format:

[Translated Balance Type Name] [Wallet Balance]

Where:

- [Translated Balance Type Name] is entered in the **Translated Name** field
- [Wallet Balance] is the subscriber's balance in the appropriate units

Example: If the translated name is 'Time', and the balance in seconds is 300, then the short message will be:

"Your Time balance is 300 seconds"

Balance Type Translations Fields

This table describes the balance-type translation fields.

Field	Description
Language	The language the short message is being translated to. This field cannot be changed after the record is first saved. This list is populated by the **Language** tab on the ACS Tools screen. For more information about configuring languages, see *ACS User's Guide*.
Balance Type	The balance type this translation will be for. This list is populated by the records configured in the **Balance Types** tab. This field cannot be changed after the record is first saved. **Tip:** You can create only one balance-type translation for each language and balance-type combination.
Single Balance Currency Type	If required, you can select a different single balance currency type to use for the balance type. **Note:** This field is available only if the **Balance Type** field is set to a balance type that has a unit of cash.
Dual Balance Currency Type	If required, you can select a different dual-balance currency type to use for the balance type. **Note:** This field is available only if the **Balance Type** field is set to a balance type that has a unit of cash.

Field	Description
Translated Name	The translated balance-type name to send to the subscriber in short messages. If nothing is entered in this field, this part of the message will not be sent. **Tip:** The maximum number of characters allowed is 20.
Single Format for Balance	The structure of the data to send to the subscriber in short messages for a single (or first) currency. See Single Format for Balance Field.
Dual Format for Balance	The structure of the data to send to the subscriber in short messages for the second currency. **Note:** This field is not available for non-cash balance types or balance types that have only one currency.
Separator	The character to use to separate the different balances when put together in an SMS Notification. **Example:** If you enter a comma (,) and there are two balances, General Cash and Promotional Cash, the short message sent in response to a balance inquiry looks like this: General Cash balance $20.00 , Promotional Cash balance $10.00 .
Balance Expiry	The balance-expiry text. **Warning:** You must include '%d' in the text. This variable will be converted to the number of days remaining until the balance expires.
No Balance Expiry	The text to output for balances that have no expiry date.

Adding balance type translations

Follow these steps to add a new balance type translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Balance Type Translations** tab, click **New**.

   Result: You see the New Balance Type Translation screen.
3. Enter data in the fields to configure this record.

   For more information about these fields, see Balance Type Translations Fields.

   Note: The **Single Balance Currency Type** and **Dual Balance Currency Type** fields and the **Dual Format for Balance** field are only available if you select a balance type which has a balance unit of cash from the **Balance Type** drop down list.
4. Click **Save**.

Related topic

Balance Type Translations

Editing balance type translations

Follow these steps to edit an existing balance type translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Balance Type Translations** tab, select the balance type translation to edit.
3. Click **Edit**.

   Result: You see the Edit Balance Type Translation screen.
4. Edit the fields with the changes to make.

   For more information about the fields on this screen, see Balance Type Translations Fields.

   Note: The **Language** and **Balance Type** fields cannot be edited.
5. Click **Save**.

Related topic

Balance Type Translations

Deleting balance type translations

Follow these steps to delete an existing balance type translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Balance Type Translations** tab, select the balance type translation to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database and return to the **Balance Type Translations** tab.

Related topic

Balance Type Translations

Rewards

The **Rewards** tab lets you view, add, edit and remove rewards.

You use rewards to:

- Configure product type changes based on the amount of activity a subscriber did in a defined period
- Specify the message to output to a subscriber when they receive a reward
- Grant additional cash or equivalent bonuses

Any combination of product type change and cash reward can be defined, including:

- Cash rewards only (where there is no product type change)
- Product type changes only (where there is no associated cash reward)
- Both cash rewards and product type rewards

Multiple balance type

You can add more than one balance type to a reward type. When a reward is triggered, all balance types associated with the reward type are recharged. This can include both monetary balance types (such as general cash or promotional cash) and non-monetary balance types (such as free SMS or time).

More than one entry can be added for the same balance type, with different details for each entry, including:

- Balance values and balance policies
- Unique expiry dates and extension policies
- Balance availability dates that will be applied when the selected balance type entry is recharged

Offset date rules

Here are the rules which apply when setting a balance offset date.

1. You may only set balance offset dates for the following balance type categories:
   - Chargeable
   - Cross balance discount
2. If you set the balance offset date to a specific date then the balance expiry policy options will be disabled.
3. If you set the balance offset date to a specified number of days or months, then the balance offset date will be determined by extending the current system date by the configured value.
4. If you set the balance offset date (either as a specific date or as a number of days/ months) then you can also set a balance expiry date. The balance expiry date will be calculated from the specified balance offset date.

Notifications

Notifications can be sent when a reward is triggered. To send a notification when the subscriber's account is close to triggering a reward, specify an additional reward with no value, which includes the notification.

Example: You have a reward which is triggered when the subscriber has used 100 short messages. You want to send subscribers who have sent 90 short messages a notification which will encourage them to send 10 more (for example: "You have nearly reached the bonus SMS level.").

Create a new reward which is triggered when a subscriber has used 90 short messages. The new reward will not change any balances, but it will send out the message as a notification.

Triggering rewards

Rewards are triggered on VWS Voucher and Wallet Servers for one of the following:

- The reward type balance type threshold is reached.
- The relevant expenditure balance expires.

Expiration examples

This table provides examples of when a reward is triggered.

Period	Expiration	Example
Daily	Midnight same day	Activated @ 1:30 pm. Expires midnight same day.
Weekly	Midnight	Activated @ 1:30 pm Tuesday. Expires midnight following Monday.
Monthly	Midnight following month	Activated @ 1:30 pm 5th of the month. Expires midnight of 4th of the following month.
Yearly	Midnight following year	Activated @ 1:30 pm 5th March. Expires midnight 4th March following year.
Wallet	24 hours before the wallet expires @ 1:30pm 5th March.	Expires 1:30pm 4th March If less than 24 hours exist before wallet expiry, wallet will not be recreated.

Note: Unlike other expenditure balance types, the wallet expenditure balance type cannot be used again on expiry. Once the wallet expires, the system will not recreate or add to the wallet expenditure balance, until the wallet expiry date/time is extended to be more than 24 hours in the future. The wallet expenditure balance is recreated and will be used once more after the wallet expiry extension.

Rewards fields

This table describes the function of each field.

Field	Description
Reward Type	The expenditure balance type where the activity qualifying the subscriber for the reward is recorded.
Current Product	The product type from which the subscriber's account is being transferred. **Tip:** Selecting `ALL PRODUCTS` from the drop down list will set this reward to apply to any product type.

Field	Description
Start Amount	The amount which will trigger the change of product type. **Warning:** Rewards must be defined for all monthly totals within a product type. For example, if you want to have a reward which is triggered when a subscriber has a total of $50 of activity in a month/year, you will also need to configure a reward for subscribers who have a smaller monthly total and the same current product.
Reward Product	The product type to which the subscriber's account is being transferred. **Note:** Selecting `NO PRODUCT` from the drop down list means the subscriber's account will not be transferred.
Reward Description	A brief description of the reward.
Start Date	The start date of the period during which the subscriber's expenditure will be tracked for earning this reward.
End Date	The end date of the period during which the subscriber's expenditure will be tracked for earning this reward.
Notification Template	The notification sent to the subscriber when they receive a reward. **Note:** For information about setting up notifications, see *ACS User's Guide*.
Reset Counter	Whether to reset the expenditure balance type specified in the **Reward Type** field when the reward is triggered. **Note:** This check box is only available if you have selected the **Real-Time Reward** option.
Real-Time Reward	Indicates that the reward is applied as soon as the expenditure threshold is reached.
Control Plan	Defines the control plan that will be used to apply the reward for subscribers who are on a non VWS charging domain. **Note:** The control plan must contain the Voucher Type Recharge node.
Reward Announcement	Defines the announcement to play when the reward is selected using the Play Reward node.

Adding rewards

Follow these steps to add a new reward.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Rewards** tab, click **New**.

   Result: You see the New Reward screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Rewards fields.

4. Click **Save**.

Related topic

Rewards

Editing rewards

Follow these steps to edit an existing reward.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Rewards** tab, select the reward to edit.
3. Click **Edit**.

   Result: You see the Edit Reward screen.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Rewards fields.

5. Click **Save**.

Related topic

Rewards

Deleting rewards

Follow these steps to delete an existing reward.

Warning: When you delete a reward, any associated freeform SMS messages are also deleted.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Rewards** tab, select the reward to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK** to delete the record from the database and return to the **Rewards** tab.

Related topic

Rewards

Multi-Balances fields

This table describes the function of each field.

Field	Description
Balance Type	The balance type you want the reward to apply to. This field is populated by the records on the Balance Types tab. **Note:** Any valid balance type can be selected. This includes non cash balance types, such as time.
Value	The reward amount for balances of the balance type selected in the **Balance Type** field.
Tax Plan	The tax plan associated with this voucher type. **Note:** For inclusive tax, the tax component will be removed before crediting the subscriber.
Balance Expiry Period	The period between when the reward is activated and when the balance will expire. Depending on the selection in the expiry period type options, enter one of: • Days and hours • Months **Note:** Month expiries set expiry dates measured in calendar months. If a bucket is created on the 31st of the month, and the expiry will be on month which has 30 days or less, the expiry date is set for the 1st of the month after. For example, a two-month bucket created on the 31st of December will expire on the 1st of March. **Tip:** The `expireAtMidnight` configuration option in **eserv.config** overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For further information about this configuration option, see *VWS Technical Guide*.
Expiry Period Type	The unit the balance expiry period is calculated in. Select either: • Hours - the balance expiry is calculated in days and hours. • Months - the balance expiry is calculated in months.
Applicable Start Date	Optional start date when balances of this type can be rewarded by rewards of this type. To activate this field, select the check box to the right of the field, then, in the date selection boxes, select the day, month and year for the start date.
Applicable End Date	Optional end date when balances of this type can no longer be rewarded using rewards of this type. To activate this field, select the check box to the right of the field, then, in the date selection boxes, select the day, month and year for the end date.

Field	Description
Offset Date	Optional offset date fields used to configure the offset date to apply when balances of this type are recharged. To activate these fields, select the check box to the right of the offset date fields area. To enter: • A specific offset date: Select the **Date** option and in the date selection boxes, select the required day, month and year. • An offset date which is an extension to the current system date: Select either the **Days/ Hours** or the **Months** option. In the available field(s), type the required number of days and hours, or months by which the system date should be extended to create the offset date. **Note:** For details on the rules applying to offset dates, see Offset date rules.
Missing Balance Policy	What to do, if this balance type does not already exist in the wallet when the reward is applied. Choose one of: • Allow - the system will create the balance type and apply the reward • Fail - the reward will fail • Ignore - the reward is applied, but the system will not create the balance type
Expiry Policy	How to apply the expiry period for this balance type when rewards of this type are applied. Choose: • Ignore - no change is made to the current expiry period • Extend - the current expiry period is extended by the specified days and hours • Extend From Today - the current expiry period to be extended the specified number of days and hours from today's date • Best - The system will select the best policy option for the subscriber depending on their particular circumstances
New Bucket	Whether to create a new bucket for the balance type when the reward is applied.
Replace Balance	Whether to replace the existing balance for the balance type with the new value when the reward is applied. **Note:** You can only set the replace balance option providing there are no overlapping reward balances for the same balance type with this option set.
Allowed Product Types	The product types which rewards of this type can apply to. **Tip:** An empty Allocated list means that the balance type can be rewarded for all product types.

Adding balance types to a reward

Follow these steps to add a balance type to the current reward type.

Note: To add multiple balance types to the reward type, repeat this process as required.

1. In the Multi-Balances area at the bottom of the New Reward screen or Edit Reward screen, click **New**.

   Result: You see the New Multi-Balance screen.

2. Start to configure this record by entering data in the fields in the top of this screen. For more information about the fields on this screen, see Multi-Balances fields.

3. In the **Allowed Product Types** section select the product types for which the reward can be applied to this balance type. To:

   - Allocate a product type, select it in the **Available** list and click the '**>>**' button
   - Remove an allocated product type, select it in the **Allocated** list and click the '**<<**' button.

   Tip: An empty Allocated list means that the balance type can be rewarded for all product types.

4. Click **Save**.

   Result: The balance type details are saved, and you return to the Reward screen.

Related topic

Rewards

Editing balance types for a reward

Follow these steps to edit an existing balance type for the current reward type.

1. In the New Reward screen or Edit Reward screen, select the balance type record to edit in the Multi-Balances area.

2. Click **Edit**.

   Result: You see the Edit Multi-Balance screen.

3. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Multi-Balances fields.

4. If required, in the **Allowed Product Types** section select the product types for which this balance type can be rewarded. To:

   - Allocate a product type, select it in the **Available** list and click the '**>>**' button
   - Remove an allocated product type, select it in the **Allocated** list and click the '**<<**' button.

   Tip: An empty Allocated list means that the balance type can be rewarded for all product types.

5. Click **Save**.

   Result: The modified balance type record is saved, and you return to the Reward screen.

Related topic

Rewards

Deleting balance types for a reward

Follow these steps to delete an existing balance type from a reward.

1. In the New Reward screen or Edit Reward screen, select the balance type record to delete in the Multi-Balances area.
2. Click **Delete**.

   Result: You see the Delete Multi-Balance prompt.
3. Click **Apply** to delete the record from the database.

Related topic

Rewards

Reward Product Translations

The **Reward Product Translations** tab lets you view, add, edit and remove the translations used by the Call Info Text Message feature node.

A translation is required for each language, source product and destination product. The reward translations are specified separately for each service provider.

Topics:

Adding reward product translations

Editing reward product translations

Deleting reward product translations

Adding reward product translations

Follow these steps to add a new reward product translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Reward Product Translations** tab, click **New**.

   Result: You see the New Reward Product Translation screen.
3. From the **Reward Type** drop down list, select the balance type the reward applies to.

   Tip: The available reward types are a sub-set of the balance types that have been configured where the expenditure type is not `None`.
4. From the **Original Product Type** drop down box, select the subscriber's previous product type.
5. From the **Reward Product Type** drop down box, select the product type the subscriber is being transferred to.

   Tip: If an invalid product type transfer has been chosen, the instructions under the **Translation** field will indicate that an invalid original/reward combination was

selected. The original and reward product types must match a current and reward product type pair in a reward.

6. From the **Language** drop down box, select the language the message sent to the subscriber should be in. This will be sent instead of the default text for this system.
7. In the **Translation** field, type the text which should be sent to the subscriber when their product type is changed as part of a reward.

   Tip: If the text entered in this field is invalid, the instructions under the **Translation** field will indicate that text entered is invalid.
8. Click **Save**.

Related topic

Reward Product Translations

Editing reward product translations

Follow these steps to edit an existing reward product translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Reward Product Translations** tab, select the reward product translation to edit.
3. Click **Edit**.

   Result: You see the Edit Reward Product Translation screen.
4. The **Translation** field is the only editable field.

   Tip: The details of the fields are described in Adding reward product translations.
5. Click **Save**.

Related topic

Reward Product Translations

Deleting reward product translations

Follow these steps to delete an existing reward product translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Reward Product Translations** tab, select the reward product translation to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database and return to the **Reward Product Translations** tab.

Related topic

Reward Product Translations

Wallet Name Translation

The **Wallet Name Translation** tab lets you view, add, edit and remove translations of wallet type names to the subscriber's language for real-time wallet notifications. A translation is required for each wallet type and language. The wallet name translations are specified separately for each service provider.

Topics:

Adding wallet name translations

Editing a wallet name translation

Deleting a wallet name translation

Adding wallet name translations

Follow these steps to add a new translation for a wallet type name.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Wallet Name Translation** tab, click **New**.

   Result: You see the New Wallet Name Translation screen.
3. From the **Language** drop down box, select the language the wallet type name will be translated to.
4. From the **Wallet Type** drop down box, select the wallet type that will be translated.
5. In the **Translation** field, type the text which will be sent to the subscriber in the short message. This will be sent instead of the default text for this system.

   Tip: If there is a problem with the translation text, the instructions under this field will indicate one of the following:

   - A translation is required (because there is no text in the Translation field)
   - The translation is too long (because there are more than 12 characters in it)
6. In the **Wallet Expiry** field, type in the balance expiry text.

   Warning: You must include '%d' in the text. This variable will be converted to the number of days remaining until the wallet expires.
7. In the **No Wallet Expiry** field, type the text to output for wallets that have no expiry date.
8. Click **Save**.

Related topic

Wallet Name Translation

Editing a wallet name translation

Follow these steps to edit an existing Wallet Name Translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.

2. In the table on the **Wallet Name Translation** tab, select the wallet name translation to edit.
3. Click **Edit**.

   Result: You see the Edit Wallet Name Translation screen.
4. Edit the details as described in Adding wallet name translations.

   Note: The **Language** and **Wallet Type** fields are for reference only, they are not editable.
5. Click **Save**.

Related topic

Wallet Name Translation

Deleting a wallet name translation

Follow these steps to delete an existing wallet name translation.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Wallet Name Translation** tab, select the wallet name translation to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database and return to the **Wallet Name Translation** tab.

Related topic

Wallet Name Translation

Real-Time Wallet Notifications

The **Real-Time Wallet Notifications** tab lets you configure when to trigger real-time notification messages for a subscriber, based on the following events:

- Wallet expired
- Wallet state changed
- Balance Expired
- Balance Charged
- Balance Recharged

For more information about how real-time wallet notifications are delivered, see *CCS Technical Guide*.

Tip: You choose which real-time wallet notifications to enable on the Product Type screens (**SMS > Services > Subscriber Management > Product Type** tab, then for a product type, **Real-Time Wallet Notification** option).

Real-Time Notifications fields

This table describes the function of each field.

Field	Description
Name	A unique name for the real-time notification message.
Notification Type	The type of event that triggers the notification.
Threshold	The total balance that triggers the notification. For charging notifications, the message is triggered when a balance that was above the threshold changes so it is equal to or below the threshold. For recharging notifications, the message is triggered when a balance that was below the threshold changes so it is equal to or above the threshold. **Tip:** For time thresholds, this value is in seconds. **Note:** This field is optional. If no value is entered, no threshold check is made and a notification is triggered on any charge or recharge event.
Above credit limit	Include the subscriber's credit limit with the threshold to determine notification triggering. **Note:** This check box is on the New and Edit Real-Time Notification screens and not on the tab table.
Excluding reservations	To determine notification triggering, exclude all current uncommitted reservations from the balance for comparison with the threshold. The default is to include all uncommitted reservations in the balance for comparison with the threshold. **Note:** This check box is on the New and Edit Real-Time Notification screens and not on the tab table.
Old State	Indicates the state a wallet must be changed from when triggering a `Wallet State Change` notification. **Note:** This option is only available if `Wallet State Change` is selected in the **Notification Type** field.
New State	Indicates the state a wallet must be changed to when triggering a `Wallet State Change` notification. **Notes:** • This option is only available if `Wallet State Change` is selected in the **Notification Type** field. • A notification is triggered only if the old and new states are different.
Balance Type	The balance type associated with the notification. **Tip:** This field applies to charging, recharging and balance expiry notifications.

Field	Description
DAP Operation	The name of the DAP operation to use to output the notification message. Choosing `No DAP` will only output a notification. **Tip:** This field is populated by the XML templates set up in the DAP application. For more information on templates, see *DAP User's Guide*.
Suppress DAP	Indicates whether DAP notifications should be suppressed for certain events. Individual subscribers can opt-out of receiving DAP notifications by having the value **true** in their profile at the drop-down tag selected here. **Tip:** If `Not Used` is selected the notifications will be sent in all cases.
Notification Template (SMS Template)	The name of the notification template to use to output a notification. Choosing `No SMS` will only send a DAP Notification. **Tip:** This field is populated by the notification templates set up in ACS. For more information, see *ACS User's Guide*.
Suppress Notification (Suppress SMS)	Indicates whether notifications should be suppressed. No notifications will be sent if this field is set to `true`. **Tip:** If `Not Used` is selected the notifications will be sent in all cases
Wallet Type	The wallet type associated with the notification. Options are: • Primary • Secondary
Reference	Reference

Trigger notification example

This example is for a charging notification.

If the:

- threshold is $30
- actual balance is $30
- credit limit is $10, and
- an outstanding reservation for $5

This table shows how the comparison value is computed for these values:

Excluding reservations	Not above credit limit	Above credit limit
No	Actual balance = $30 Notification triggered (comparison = threshold)	Actual balance + Credit Limit $30+ $10 = $40 No notification (comparison > threshold)
Yes	Actual balance - Reservations $30 - $5 = $25 Notification triggered (comparison < threshold)	Actual balance - Reservations + Credit Limit $30 - $5 + $10 = $35 No notification (comparison > threshold)

Adding real-time wallet notifications

Follow these steps to add the configuration for a real-time wallet notification.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Real-Time Wallet Notifications** tab, click **New**.

   Result: You see the New Real-Time Wallet Notifications screen.
3. In the **Name** field enter a unique name for the real-time notification message.
4. From the **Notification Type** drop down box, select the type of notification to generate.
5. Fill in the fields, depending upon notification type selected:
   - For notification types `Charging` or `Recharging`, enter data as follows:
     - **Threshold** field - the threshold for the notification.
     - **Above credit limit** check box - select to use any credit limit with the threshold.
     - **Exclude reserved funds** check box - select to exclude uncommitted reservations from the balance that is compared with the threshold value; leave clear to include uncommitted reservations with the balance.
     - **Balance Type** drop down list - select the applicable balance type.

     Tip: For time thresholds, the **Threshold** value is in milliseconds.
   - For notification type `Wallet State Change`, enter data in the **Old State** and **New State** drop down boxes.
   - For notification type `Balance Expiry`, select a record from the **Balance Type** drop down box.
6. Configure the rest of this record by selecting the required option from the remaining drop down lists on this screen.

   For more information about the fields on this screen, see Real-Time Notifications fields.
7. Click **Save**.

Warning: Real-time wallet notifications are not usable until they are associated with one or more product types. To use this new notification for a subscriber, the wallet product type for the subscriber must now be configured.

To check which product type the wallet uses, see **SMS > Services > Subscriber Management > Subscriber** tab, then edit the required subscriber details, followed by the **Wallets** option.

To configure the product types that may use this new real-time wallet notification see **SMS > Services > Subscriber Management > Product Type** tab, then for a product type, **Real-Time Wallet Notification** option, see Real-Time Wallet Notifications.

Related topic

Real-Time Wallet Notifications

Editing real-time wallet notifications

Follow these steps to edit an existing real-time wallet notification.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Real-Time Wallet Notifications** tab, select the wallet notification to edit.
3. Click **Edit**.

   Result: You see the Edit Real-Time Wallet Notifications screen.
4. Edit the fields with the required changes.

   For more information about the fields in this screen, see Real-Time Notifications fields and Adding real-time wallet notifications.
5. Click **Save**.

Related topic

Real-Time Wallet Notifications

Deleting real-time wallet notifications

Follow these steps to delete an existing real-time notification configuration.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Real-Time Wallet Notifications** tab, select the real-time wallet notification to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Real-time Notifications confirmation message and the record is removed from the database.

Policy Counters

The **Policy Counters** tab lets you view, add, edit and remove policy label tiers and policy label tier ranges.

Policy Counters fields

This table describes the function of each field.

Field	Description
Label Name	Name of the policy label tier.
Balance Type	Type of balance.
Send Pending Policy	Specify whether to send pending policy.
Change User	User ID of the user who changed the status.
Change Date	Date on which the change was made.

Policy Label Tier fields

This table describes the function of each field.

Field	Description
Name	Name of the policy label tier.
Balance Type	Type of balance
Send Pending Policy	Specify whether to send pending policy.
Status Name	Name of the status
Start	Start of range
End	End of range
Change User	User ID of the user who made the change.
Change Date	Date on which the change was made.

Adding Policy Label Tiers

Follow these steps to add policy label tiers.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, click **New**.

   Result: You see the New Policy Label Tier screen.
3. In the **Name** field, enter a unique name for the policy label tier.
4. From the **Balance Type** drop down box, select the type of balance.
5. If you want to send pending policy, select **Send Pending Policy.**
6. Click **Save**.

Related topic

Policy Counters

Editing Policy Label Tiers

Follow these steps to edit an existing policy label tier.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, select the policy counter to edit.
3. Click **Edit**.

   Result: You see the Edit Policy Label Tier screen.
4. Edit the fields with the required changes.
5. Click **Save**.

Related topic

Policy Counters

Deleting Policy Label Tiers

Follow these steps to delete an existing policy label tier.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, select the policy counter to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the confirmation message and the record is removed from the database.

Related topic

Policy Counters

Adding Policy Label Tier Ranges

Follow these steps to add policy label tier ranges.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, select the policy counter to which you want to add policy label tier ranges.
3. Click **Edit**.

   Result: You see the Edit Policy Label Tier screen.
4. Click **New**.

   Result: You see the Policy Label Tier Range screen.
5. Fill in the fields:
   - **Status Name** field - the name of the tier. For example, Low Balance.

- **Start of range** field - enter a number for the start of the policy label tier range.
- **End of range** field - enter a number for the end of the policy label tier range.

6. Click **Save**.

Related topic

Policy Counters

Policy Label Tier Range fields

This table describes the function of each field.

Field	Description
Status Name	Name of the status
Service State	The state the status is mapped to.

Editing Policy Label Tier Ranges

Follow these steps to edit policy label tier ranges.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, select the policy counter you want to edit.
3. Click **Edit**.

   Result: You see the Edit Policy Label Tier screen.
4. In the Edit Policy Label Tier screen, select the policy label tier to edit.

   Click **Edit**.

   Result: You see the Policy Label Tier Range screen.
5. Edit the fields with the required changes.
6. Click **Save**.

Related topic

Policy Counters

Deleting Policy Label Tier Ranges

Follow these steps to delete policy label tier ranges.

1. In the Wallet Management screen, select the service provider from the Service Provider list.
2. On the **Policy Counters** tab, select the policy counter from which you want to delete policy label tier ranges.
3. Click **Edit**.

   Result: You see the Edit Policy Label Tier screen.
4. In the Edit Policy Label Tier screen, select the policy label tier to delete.

   Click **Delete**.

Result: You see the Delete Confirmation prompt.

5. Click **OK** to delete the record from the database.

   Result: You see the confirmation message and the record is removed from the database.

Related topic

Policy Counters

Free Form Recharge

The **Free Form Recharge** tab lets you recharge a subscriber's wallets. It can be used when the subscriber has experienced problems with either the voucher or credit card recharge.

Recharging Rules - Wallet Expiry Date

The following recharge rules apply to the wallet expiry date when performing a free form recharge.

The date is calculated by determining the greatest value of the following:

- Current date + period entered in screen
- Current wallet expiry date

If the wallet is in the pre-use period, the initial wallet expiry period is used to calculate the current wallet expiry date before the comparison of the above date.

The free form recharging rules differ in that they ignore the recharge minimum wallet expiry periods specified at product type level.

Note: Non-expiry wallets ignore the expiry periods.

A subscriber's wallet with a ‘Pre-Use’ or ‘Dormant’ state will have its status changed to ‘Active’.

Recharging Rules - Balance Expiry Date

The following recharge rules apply to the balance expiry date when performing a free form recharge.

The date is calculated by calculating the greatest value of the following:

- Current date + period entered in screen.
- Current balance expiry date.

If the wallet is in pre-use, the initial balance expiry period is used to calculate the current balance expiry date before the comparison of the above date.

The free form recharging rules differ in that they ignore the recharge minimum balance expiry periods specified at product type level.

Note: Non-expiry wallets ignore the expiry periods.

A subscriber's wallet with a ‘Pre-Use’ or ‘Dormant’ state will have it status changed to ‘Active’.

Completing free form recharges

Follow these steps to perform a free form recharge on a subscriber's wallet.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the **Free Form Recharge** tab, enter the **Subscriber ID**.
3. From the **Wallet Type** options, select one of the following:
   - **Primary Wallet**
   - **Secondary Wallet**.
4. In the **Balance Expiry Period** fields, enter the days and hours to be added to the subscriber's balance expiry period.

   Tip: The `expireAtMidnight` configuration option overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For more information about this configuration option, see the *VWS Technical Guide*.
5. In the **Wallet Expiry Period** fields, type the days and hours to be added to the wallet expiry period.

   Note: The `expireAtMidnight` configuration option overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For more information about this configuration option, see the *VWS Technical Guide*.
6. In the **Amount** field, enter the amount which will be added (or subtracted in the case of a negative value) to the wallet balance.

   Tip: The amount is in the system currency.
7. In the **Reference** field, enter the recharge reference ID.

   Tip: The recharge may include a bonus award if the reference matches a **Bonus Type Component** field.
8. From the **Type Of Recharge** options, select the type of recharge to be completed. Select one of the following:
   - `Free Form Recharge` to indicate a free form recharge will be performed (EDR type 8).
   - `Credit Card Recharge` to indicate a credit card recharge will be performed (EDR type 9)
   - `Voucher Recharge` to indicate the customer tried to perform voucher recharge (EDR type 10)

   Notes:
   - Credit card recharges require a properly configured credit card to be available.
   - Voucher recharges requires the balance type to allow vouchers.
9. Click **Recharge** to create an EDR of the type specified in step 7.

   Note: If a maximum value has been configured for the balance type being recharged, then the maximum value policy will be applied to amounts which exceed the configured maximum. For more information on:
   - Maximum balance values, see Maximum balances

- Maximum value policy, see Maximum balance policy

Error Messages – Free Form Recharges

There are six possible types of error messages that may be reported when **Recharge** is clicked. The messages are:

- Invalid CLI. Recharge was not performed.
- This account does not have any credit card details. Recharge was not performed.
- This account does not allow voucher recharges. Recharge was not performed.
- This account is in state frozen. Recharge was not performed.
- This account is in state suspended. Recharge was not performed.
- This account is in state terminated. Recharge was not performed.

Wallet Life Cycle

WLC plans

A wallet life cycle plan is defined at service provider level.

Wallets may be shared by many subscribers and these subscribers may have different product types and hence different wallet life cycle plans to apply.

A WLC plan contains a list of WLC periods, which are actioned in their offset order.

WLC periods

A wallet life cycle period is associated to the account, which is a single subscriber-wallet association. if a subscriber has multiple wallets, each subscriber-wallet association could have its own distinct WLC period.

In a shared wallet environment, the current wallet life cycle period to apply is calculated from the wallet expiry and the wallet life cycle plan associated with the specific subscriber and the product type linked to that subscriber-wallet association.

When viewing the defined wallet life cycle periods within the **Wallet Life Cycle Plan** tab, the periods are ordered in ascending wallet expiry offset order, for example, -5 days before, then -2 days before, +1 days after. See Wallet Life Cycle Period fields.

Duration of period

A WLC period starts at its expiry offset date and continues until the next period starts, or the wallet is removed.

Example 1

WLC Plan 1 contains 3 periods:

- WLC Period 1 (-10 days)
- WLC Period 2 (0 days)
- WLC Period 3 (10 days)

WLC period 1 starts 10 days before expiry and finishes on wallet expiry, when WLC period 2 starts.

Example 2

WLC Plan 2 contains 2 periods:

- WLC Period 4 (-20 days)
- WLC Period 5 (+20 days)

WLC period 4 starts 20 days before expiry and finishes 20 days after wallet expiry, when WLC period 5 starts.

Product Type swap

The wallet life cycle plan for a given product type will apply to all subscribers of that product type.

When a subscriber swaps to a different product type, the wallet life cycle period for the new product type will be calculated based on the wallet expiry date, and the control plan for the new period will be executed.

On product type swap the wallet life cycle period “On Backout” actions (if configured) and the “On Entry” actions (if configured) will be executed when the product type swap action will be treated by the system.

Note: There will be a delay between the moment when the product type swap was requested and the moment when all actions are executed.

Finding a WLC plan

Follow these steps to search for an existing wallet life cycle plan..

1. In the Wallet Management screen, select the service provider from the drop down list.
2. On the **Wallet Life Cycle** tab, enter the search criteria you are using to find the required WLC plan.
3. You can select the **Marked For Deletion** check box to include plans in the process of being deleted in the search results (row will be grayed).

   Note: By default the check box is cleared and the search will ignore deleted plans.
4. Click **Search**.

   Result: The WLC plan table displays the first 100 records matching the search criteria entered in steps 2 and 3. If the required plan is not displayed and more than 100 records were returned, enter different search criteria and click **Search** again.

Adding a WLC plan

Follow these steps to add a new wallet life cycle plan.

1. On the **Wallet Life Cycle** tab, click **New**.

   Result: You see the New Wallet Life Cycle Plan screen.
2. In the **Name** field, enter the name of the wallet life cycle plan.

3. Click **Save**.

   Result: The new plan is created. To add periods to the plan, you need to edit the plan. See Editing a WLC plan.

Related topic

Wallet Life Cycle

Copying a WLC plan

Follow these steps to copy a wallet life cycle plan.

1. On the **Wallet Life Cycle** tab, select the wallet life cycle plan you want to copy from the table and click **Copy**.

   Result: You see the Copy Wallet Life Cycle Plan screen.

2. Name the wallet life cycle plan.
3. Click **Save**.

   Result: The plan is added to the list in the table. The copied plan will contain the same periods as the original plan.

Modifying a currently active/associated plan

Here is the recommended method to modify a currently active/associated wallet life cycle plan.

1. Copy the WLC plan.
2. Make the required changes to the plan copy.
3. Re-associate the appropriate product types to the new plan.
4. Delete the original plan when transition to the new plan is deemed successful.

Editing a WLC plan

Follow these steps to edit a wallet life cycle plan.

1. On the **Wallet Life Cycle** tab, select the wallet life cycle plan you want to edit from the table and click **Edit**.

   Result: You see the Edit Wallet Life Cycle Plan screen.

2. The screen displays the wallet life cycle periods, in ascending wallet expiry offset order, for this plan. At the bottom of the screen, you can:
   - Adding a WLC period
   - Editing a WLC period
   - Changing a WLC plan name
   - Deleting a WLC period

Related topic

Wallet Life Cycle

Deleting a WLC plan

Follow these steps to delete an existing wallet life cycle plan.

1. On the **Wallet Life Cycle** tab, select the wallet life cycle plan to delete from the table and click **Delete**.

   Result: You see the Delete Confirmation prompt.

2. Click **OK**.

   Result: You see a second prompt.

3. Click **OK**.

   Result: The plan is removed from the table on the tab. It will be deleted from the system after all subscribers have been disassociated from the WLC Plan.

   Note: You can search for deleted WLC plans by first selecting the **Marked for Deletion** check box.

Related topic

Wallet Life Cycle

Adding a WLC period

Follow these steps to add a new wallet life cycle period to a wallet life cycle plan.

1. On the Edit Wallet Life Cycle Plan screen, click **Add**.

   Result: You see the New Wallet Life Cycle Period screen.

2. Fill in the fields, select disabled features and allow or disallow named event classes, as described in Wallet Life Cycle Period fields.

   Note: If the wallet life cycle period defines no functions to be disabled when the period is entered, then a notification or control plan operation is required.

3. Click **Save**.

Related topic

Wallet Life Cycle

Wallet Life Cycle Period fields

This table describes the function of each field.

Field	Description
Name	Unique name for the WLC period.
Display Name	The display name of the WLC period. **Note:** Although a Wallet Life Cycle period name must be unique within the Wallet Lifecycle Plan, the Display Name may be non-unique and used within the CCP screens across multiple subscribers and product types.

Field	Description
Expiry Offset (days)	Number of days offset, from expiry of the wallet, to start the period. • Negative is days *before* expiry • Positive is days *after* expiry Only one Wallet Life Cycle period will be applicable (active) for any given expiry offset within a defined Wallet Life Cycle Plan. **Example:** '-10' evaluates to 10 days before expiry, or '+5' evaluates to 5 days after expiry. Creating one period with offset -10 results in a single period active from 10 days before expiry right up to removed date. Creating a second period with offset +5 will immediately curtail the first period, ending it at +4. It will be invalid to create two periods with the same offset.
Disabled feature	You can select the check box(es) to disable: • Session charges • General charges • General recharges
Named Event Classes	Select and move the available and disallowed Named Event classes using the **>>** and **<<** buttons. If the period is: • *Prior* to the Wallet expiry date, then Named Event Classes will all be allowed by default and will be disallowed as the exception. • *On* or *after* the Wallet expiry date, then Named Event Classes will all be disallowed by default and will be allowed as the exception.
Notifications	If required, select the notifications to send on: • Entry • Backout. For more information about configuring SMS Notifications, see *ACS User's Guide*.
Control Plans	If required, select the control plans to run on: • Entry • Backout

Editing a WLC period

Follow these steps to edit a wallet life cycle period.

1. On the Edit Life Cycle Plan screen, select the wallet life cycle period to edit from the table and click **Edit**.

   Result: You see the Edit Wallet Life Cycle Period screen.

2. Edit the fields and named event classes, as described in Wallet Life Cycle Period fields.

   Note: If the wallet life cycle period defines no functions to be disabled when the period is entered, then a notification or control plan operation is required.

3. Click **Save**.

Related topic

Wallet Life Cycle

Deleting a WLC period

Follow these steps to delete an existing wallet life cycle period.

1. On the Edit Wallet Life Cycle Plan screen, select the WLC period to delete from the table and click **Delete**.

   Result: You see the Delete Confirmation prompt.

2. Click **OK**.

   Result: You see a second prompt.

3. Click **OK**.

   Result: The period is greyed out in the WLC Period table. The period will be deleted from the system after all subscribers have been disassociated from the WLC Period.

Related topic

Wallet Life Cycle

Changing a WLC plan name

Follow these steps to change the name of an existing wallet life cycle plan.

1. On the Edit Wallet Life Cycle Plan screen, change the WLC plan name.
2. Click **Update**.

   Result: You return to the **Wallet Life Cycle** tab. The name is updated.

Related topic

Wallet Life Cycle

Bonus Types

The **Bonus Types** tab lets you view, add, edit and remove bonus types.

Bonuses allow awards to be given to subscribers who recharge their wallets, where the recharge value is within a specified range of values.

Bonus types defines the following:

- Which awards are available for each type of recharge
- What balances the award is added to

Topics:

Bonus Types fields

Adding bonus types

Editing bonus types

Deleting bonus types

Bonus Types fields

This table describes the function of each field.

Field	Description
Bonus Type	The type of recharge to which this bonus type will apply.
Component	If `Custom` is selected in the **Bonus Type** field, this field indicates the component reference value. This is used to specify the PI recharge required for this bonus type, and as the reference for free form recharges. **Tip:** A Bonus Set will only be applied when the Free Form **Recharge Reference** field and the **Bonus Type Component** field match.
Bonus Set	The bonus values set containing the promotional balance to which this bonus type will be applied.
Promotional Balance	The balance type to which this bonus type will be applied. **Note:** If the **Percentage** field is filled out in a bonus value used with this bonus type, the recharge bonus will be added to this balance type.

Adding bonus types

Follow these steps to add a new Bonus Type.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. From the **Bonus Types** tab, click **New**.

   Result: You see the New Bonus Type screen.
3. From the **Bonus Type** drop down list, select the type of recharge this Bonus Type will apply to.
4. If you have selected Custom from the **Bonus Type** box, in the **Component** field type in the component reference value.
5. Configure the rest of this record by entering data in the remaining fields on this screen.

   For more information about the fields on this screen, see Bonus Types fields.
6. Click **Save**.

Related topic

Bonus Types

Editing bonus types

Follow these steps to edit an existing Bonus Type.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Bonus Types** tab, select the record you want to edit.
3. Click **Edit**.

   Result: You see the Edit Bonus Type screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Rewards fields.
5. Click **Save**.

Related topic

Bonus Types

Deleting bonus types

Follow these steps to delete an existing bonus type.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Bonus Types** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Error prompt.
5. Click **OK**.

Related topic

Bonus Types

Bonus Values

The **Bonus Values** tab lets you view, add, edit and remove Bonus Values.

Bonus Values are used in Bonus Types to define:

- the amount which triggers the award
- the value of the award, and
- the balance which must be recharged to qualify for the reward.

Awards may be either:

- a bonus percentage applied to the amount the Balance is recharged by, or
- a Voucher Type.

The entries in a Bonus Set must cover the full range of values from 0 to the highest End value. If there is a gap in the covered values, the Bonus Set will fail. The Bonus Set may contain both percentage bonus values and voucher type bonus values.

For more information about Voucher Types, see Voucher Type.

Bonus Values Example 1

To create a Bonus Value which applies a 5% bonus to all Voucher recharges of more than $20, you must also configure a Bonus Value which applies a 0% bonus to recharges of $0 to $19.

Bonus Values Example 2

Three recharge Bonuses have been specified in the example screen below.

- For a recharge of 0 to 1,000 cents, a Bonus of 8% of the recharge amount is added to the Balance.
- For a recharge of 1,001 cents to 4999 cents, a Bonus of 10% of the recharge amount is added to the Balance.
- For a recharge of over 5000 cents, a Bonus of 12.5% of the recharge amount is added to the Balance.

Adding bonus values sets

Follow these steps to add a new Bonus Values Set.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. From the **Bonus Values** tab, click **New Set**.

   Result: You see the New Bonus Values Set screen.
3. In the **Name** field, type the name of the new Bonus Values Set.
4. Click **Save**.

Related topic

Bonus Values

Editing bonus values sets

Follow these steps to edit an existing Bonus Values Set.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. From the **Bonus Values** tab, in the **Bonus Set Name** drop down box, select the record you want to edit.
3. Click **Edit Set**.

   Result: You see the Edit Bonus Values Set screen.
4. Edit the set name as required.
5. Click **Save**.

Related topic

Bonus Values

Deleting bonus values sets

Follow these steps to delete an existing Bonus Set.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. From the **Bonus Values** tab, in the **Bonus Set Name** drop down box, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Bonus Value Set prompt.
5. Click **OK**.

Related topic

Bonus Values

Bonus Values fields

This table describes the function of each field.

Field	Description
Trigger Balance	This bonus value will be triggered when recharges are made to this balance. If not set, the trigger balance will be general cash.
Start	The low end of the range of recharge value that will trigger this bonus. **Note:** At least one bonus value in the set must start at 0.
End	The high end of the range of recharge value that will trigger this bonus.
Percentage	The percentage of the recharge amount to add to the recharge as a bonus when this bonus is triggered. **Notes:** • The additional recharge amount will be applied to the balance type specified in the Bonus Types fields. • This field cannot be set if a voucher type is selected in the **Voucher Type** field.

Field	Description
Voucher Type	The voucher type which defines the reward which will be given to the subscriber when the bonus is triggered. **Notes:** • This field is populated by the entries in the **Voucher Type** tab. For more information, see Voucher Type. • Selecting an entry from this drop down list will clear any value from the **Percentage** field, and lock the field.

Adding bonus values

Follow these steps to add a new Bonus Value.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Bonus Values** tab, select the Bonus Set Name to add bonus values to, from the drop down list.
3. Click **New**.

   Result: You see the New Bonus Values screen.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Bonus Types fields.
5. Click **Save**.

Related topic

Bonus Values

Editing bonus values

Follow these steps to edit an existing Bonus Value.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Bonus Values** tab select the Bonus Set Name that contains the values you want to edit.
3. In the grid on the tab, select the record you want to edit and click **Edit**.

   Result: You see the Edit Bonus Values screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Bonus Values fields.
5. Click **Save**.

Related topic

Bonus Values

Deleting bonus values

Follow these steps to delete an existing Bonus Value.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Bonus Values** tab, select the Bonus Set Name that contains the value to delete from the drop down box.
3. In the table, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Bonus Value Set prompt.
5. Click **OK**.

Related topic

Bonus Values

Cumulative Balance Plans

The Cumulative Balance Plans tab lets you:

- configure the balance categories included in your cumulative balance plans and
- assign balance types to the different balance categories.

The Cumulative Balances node will sum the balances for each balance category in a selected cumulative balance plan and play the relevant announcements.

Cumulative Balance Plan fields

This table describes the function of each field.

Field	Description
Name	Cumulative balance plan name.
Unit Type	Lists the available unit types for balance categories.
Available *Unit_Type* balances	Lists the available balance types for the selected unit type.
Unit_Type categories	Lists the categories that have been configured for the selected unit type. The balance types that have been assigned to each category are listed below the category heading.
Playback Order	• Category - Lists all the categories that have been configured for the cumulative balance plan irrespective of unit type. • Play Order - Lists the order in which balance category announcements will be played by the Cumulative Balances feature node.

Adding cumulative balance plans

Follow these steps to add a cumulative balance plan.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Cumulative Balance Plans** tab, click **New.**

   Result: You see the New Cumulative Balance Plan screen.
3. In the **Name** field, type in the new cumulative balance plan name.
4. For each relevant **Unit Type**, add the required balance categories. For details, see Adding balance categories.
5. Use drag and drop to add the required balances to each balance category. To:
   - add a balance to a balance category, select it in the available balances list and drag it to the required balance category
   - remove a balance from a balance category, select in the categories list and drag it to the available balances list.

   Tip: You can add a balance type to more than one category if required.
6. If required, change the order in which balance categories are played. You can see the current order in the **Playback Order** section.

   To change the position of a Category in the play order, select it in the **Playback Order** section and click either the **UP** or **DOWN** button.

   Note: All the configured categories appear in the Playback Order section irrespective of their Unit Type.
7. Click **Save.**

Related topic

Cumulative Balance Plans

Editing cumulative balance plans

Follow these steps to edit a cumulative balance plan.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the Cumulative Balance Plans tab, select the required cumulative balance plan and click **Edit.**

   Result: You see the Edit Cumulative Balance Plan screen.
3. Make the required changes in the available fields. For more information on:
   - cumulative balance plan fields, see Cumulative Balance Plan fields.
   - adding balance categories, see Adding balance categories
   - editing balance categories, see Editing balance categories, or
   - deleting balance categories, see Deleting balance categories.
4. Click **Save.**

Related topic

Cumulative Balance Plans

Deleting cumulative balance plans

Follow these steps to delete an existing Cumulative Balance Plan.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the Cumulative Balance Plans tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

Related topic

Cumulative Balance Plans

Balance Category fields

This table describes the function of each field.

Field	Description
Category Name	A unique name for the balance category. The name can be up to 30 alphanumeric characters long.
Announcement Set	• **Category Announcements** section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers who belong to this balance category. • **Positive** section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers with a positive balance in their wallet. • **Negative / No Credit** section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers with a negative balance in their wallet. • **Days until balance expiration** section, this field indicates the the Announcement Set which contains the Announcement Entry to be played for Subscribers when their balance is about to expire within days. • **Balance Expiration in one day** section, this field indicates the Announcement Set which contains the Announcement Entry to be played for Subscribers when their balance is about to expire within 24 hours.

Field	Description
Announcement Entry	• **Category Announcements** section, this field indicates the Announcement Entry that will be played to Subscribers who belong to this balance category. • **Positive** section, this field indicates the Announcement Set which contains the Announcement Entry that will be played to Subscribers with a positive balance in their wallet. • **Negative / No Credit** section, this field indicates the Announcement Entry that will be played to Subscribers when they run out of credit or have a negative balance in their wallet. • **Days until balance expiration** section, this field indicates the Announcement Entry that will be played to Subscribers when their balance is about to expire soon. • **Balance Expiration in one day** section, this field indicates the Announcement Entry that will be played to Subscribers when their balance is about to expire within 24 hours.
Use unreserved balances	When selected, exclude uncommitted reservations in the available funds played in the announcements (the uncommitted reservation amount is subtracted from the available funds value).
Play Zero Cumulative Balance announcement	To play the announcements even if the cumulative balance for the category is zero, select this check box.
Play Expiry announcement	To play expiry announcements, select this check box.

Adding balance categories

Follow these steps to add a balance category to a cumulative balance plan.

1. In the **Balance Categories** area in the New/Edit Cumulative Balance Plan screen, select the **Unit Type** for which to define balance categories from the drop down list.

   Result: You see the list of available balance types for the Unit Type, and the list of available balance categories.

2. Click **Add Category**.

   Result: You see the Add Balance Category screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Balance Category fields.

4. Click **Apply**.

   Result: You will be returned to the New/Edit Cumulative Balance Plan screen and the new category will be displayed in the balance categories list.

Related topic

Cumulative Balance Plans

Editing balance categories

Follow these steps to view or edit a cumulative balance category for a Cumulative Balance Plan.

1. In the **Balance Categories** area in the New/Edit Cumulative Balance Plan screen, select the **Unit Type** to view or edit balance categories for from the drop down list.

   Result: You see the list of available balance types for the Unit Type, and the list of available balance categories.

2. Select the category to view or change and click **Modify Category.**

   Result: You see the Modify Balance Category screen.

3. Check or update the Balance Category as necessary.

   For more information about the available fields, see Balance Category fields.

4. If you have made changes to save, click **Apply**.

   If you do not want to make changes to the balance category, click **Cancel**.

   Result: You are returned to the New/Edit Cumulative Balance Plan screen.

5. Use drag and drop to modify the list of balance types included in the balance category.

   Tip: You can add a balance type to more than one category if required.

6. If required, change the order in which balance categories are played. You can see the current order in the **Playback Order** section.

   To change the position of a Category in the play order, select it in the **Playback Order** section and click either the **UP** or **DOWN** button.

   Note: All the configured categories appear in the Playback Order section irrespective of their Unit Type.

7. Click **Save.**

Related topic

Cumulative Balance Plans

Deleting balance categories

Follow these steps to delete a cumulative balance category from a Cumulative Balance Plan.

1. In the New/Edit Cumulative Balance Plan screen, select the **Unit Type** which holds the balance category you want to delete.

2. Select the balance category record you want to delete and click **Delete Category**.

   Result: You see the Modify Balance Category deletion prompt.

3. Click **OK**.

Related topic

Cumulative Balance Plans

Periodic Charge Groups

Periodic charge groups control which periodic charges a subscriber can transfer to using the Periodic Charge Transfer node, or through the CCP screen. Subscribers can only transfer to periodic charges which are in the same group as the periodic charge they want to transfer from.

Warning: CCS determines which subscription will be transferred from, by locating the current subscription which is in the periodic charge group specified by the Periodic Charge Transfer node or a periodic charge field in CCP. If a subscriber has two subscriptions within the same periodic charge group, their transfer will fail. You must ensure the design of the service restricts subscriptions appropriately.

Periodic charge group fields

This table describes the function of each field.

Field	Description
Name	The unique name of the periodic charge group.
Charges	The periodic charges listed in the Allocated list are members of this group. The periodic charges which are in these lists are populated from the records on the Periodic Charges tab. **Notes:** • A periodic charge can belong to more than one group. • The periodic charge group can be saved with no periodic charges in the Allocated list. For more information about how to use these fields and buttons, see Selection lists.

Adding periodic charge groups

Follow these steps to add a new periodic charge group.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Periodic Charge Groups** tab, click **New**.

   Result: You see the New Periodic Charge Group screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Periodic charge group fields.
4. When you have completed configuring the new periodic charge group, click **Save**.

Related topic

Periodic Charge Groups

Editing periodic charge groups

Follow these steps to edit and existing periodic charge group.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Periodic Charge Groups** tab, select the periodic charge group you want to edit.

   Tip: You can search for a specific periodic charge group by entering the periodic charge group's name in the **Name** field on the tab, and clicking **Search**. You can also use % as a wildcard.
3. Click **Edit**.

   Result: You see the Edit Periodic Charge Group screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Periodic charge group fields.
5. Click **Save**.

Related topic

Periodic Charge Groups

Deleting periodic charge groups

Follow these steps to delete an existing periodic charge group.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Periodic Charge Groups** tab, select the periodic charge group to delete.

   Tip: You can search for a specific periodic charge group by entering the periodic charge group's name in the **Name** field on the tab, and clicking **Search**.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

5

Wallet Management - Periodic Charges

This chapter explains the Periodic Charges configuration screens.

This chapter contains the following topics.

Periodic Charges

What

When

Notifications

Subscription Pro-Rating

Charge Alignment Pro-Rating

Unsubscription Pro-Rating

Periodic Charges

The **Periodic Charges** tab enables you to define subscriber charges which are applied regularly. For example, you can define periodic charges for providing a phone service, or for rental of services and equipment.

You can also define periodic charges for sending SMS notifications and for performing voucher type recharges.

Note: Each time a periodic charge occurs, it is logged in an EDR.

For more overview information about periodic charges, see Subscription Services.

Periodic Charges tab fields

This table describes the function of each field in the table on the **Periodic Charge** tab.

Field	Description
Name	See What configuration fields
Based On	See When configuration fields
Period	See When configuration fields
Custom Type	NA
Custom Value	NA
Tag Date Field	NA
Time	Notification Time - see When configuration fields
Day of Week	See When configuration fields
Day of Month	See When configuration fields
Month	Trigger month - see When configuration fields
Charge on Activation	Whether or not to charge on activation

Field	Description
Charge States	Wallet state - selected states - see When configuration fields
Wallet Type	NA
Voucher Type	NA
Event Class	See What configuration fields
Event Name	See What configuration fields
Insufficient Funds Action	See What configuration fields
Balance Type	See What configuration fields
Recharge Amount	See What configuration fields
Recharge Action	See What configuration fields
Balance Expiry Update Policy	See What configuration fields
Balance Expiry Extension	See What configuration fields
Wallet Expiry Update Policy	See What configuration fields
Success Notification	See Notification fields
Failure Notification	See Notification fields
ID	ID allocated to this record
Deletion Date	Displays the actual date that a periodic charge that has been deleted will finally be deleted. This date is calculated as the current date + one **Period** + the greatest number of any **Days After Failed Charge** for grace or loss of service notifications + 1.

Finding periodic charges

Follow these steps to search for an existing periodic charge.

1. In the Wallet Management screen, select the **Service Provider** from the drop down list.
2. On the **Periodic Charges** tab, enter the search criteria you are using to find the required periodic charge.

   Enter the first few characters of the **Name** and select the **Period** you want from the drop down box.
3. Select the **Show Marked For Deletion** check box to include charges that have been deleted, but have not yet been removed from the database, in the search results (row will be grayed).

   Note: By default the check box is deselected and the search will ignore deleted periodic charges.
4. Click **Search**.

   Result: The table displays the first 100 records matching the search criteria entered in steps 2 and 3. If the required periodic charge is not displayed and more than 100 records were returned, enter different search criteria and click **Search** again.

Adding periodic charges

Follow these steps to add a new periodic charge.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Periodic Charges** tab, click **New**.

   The New Periodic Charge window opens and displays the **What** option.
3. In the **Name** field, enter a new name for the periodic charge. The name must be unique. Maximum length is 46 characters.
4. Add the details on the different option panels as necessary. See:
   - What
   - When
   - Notifications
   - Subscription Pro-Rating
   - Charge Alignment Pro-Rating
   - Unsubscription Pro-Rating
5. Click **Save**.

Notes:

- To apply a periodic charge to a subscriber, you must assign it to their product type. For more information, see Periodic Charges.
- To add a periodic charge to a periodic charge group, you must edit the periodic charge group to add it to. For more information, Periodic Charge Groups.

Related topic

Periodic Charges

Configuration options summary

This table lists the configuration options for periodic charges and their functionality.

Option	Description
What	Configures the type of periodic charge to be applied.
When	Defines when to apply the periodic charge.
Notifications	Configures the notifications which can be sent to the subscriber.
Subscription Pro-Rating	Configures the rules for pro-rating a subscriber's periodic charge subscription.
Charge Alignment Pro-Rating	Configures the rules for aligning a subscriber's periodic charge subscription to a common cycle point.
Unsubscription Pro-Rating	Configures the rules for pro-rating a subscriber's periodic charge subscription refund.

Editing periodic charges

Follow these steps to edit an existing periodic charge.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. On the **Periodic Charges** tab, select the periodic charge to edit.

   Tip: You can search for a specific periodic charge. See Finding periodic charges.
3. Click **Edit**.

   The Edit Periodic Charges window opens and displays the **What** option.

   Note: If a periodic charge is marked for deletion, all components will be grayed out, or read-only, except for the **Loss of Service Notifications** field on the Notifications option.
4. Check or update the details on the different option panels as necessary.

   For more information about the available options, see:

   - What
   - When
   - Notifications
   - Subscription Pro-Rating
   - Charge Alignment Pro-Rating
   - Unsubscription Pro-Rating
5. If you have made changes to the periodic charge's details, click **Save**.

   If you do not want to make changes to the periodic charge's details, click **Cancel**.

Notes:

- To change which subscribers a periodic charge applies to, see Periodic Charges.
- To change which periodic charge group a periodic charge belongs to, see Periodic Charge Groups.

Related topic

Periodic Charges

Deleting periodic charges

Follow these steps to delete an existing periodic charge.

1. In the Wallet Management screen, select the service provider from the **Service Provider** list.
2. In the table on the **Periodic Charges** tab, select the periodic charge to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result:

If the periodic charge has pre-charge and grace notifications configured, you see the Deleting Periodic Charge with notifications.

If not, the periodic charges confirmation prompt appears. Note that once deleted, a record with the same name cannot be recreated.

5. Click **OK** to return to the **Periodic Charges** tab.

   Note: The periodic charge is still present until the final deletion date.

   Note: You can search for deleted periodic charges on the **Periodic Charges** tab by selecting the **Show Marked for Deletion** check box, before making the search. See Periodic Charges tab fields for a description of a deletion date.

Related topic

Periodic Charges

Deleting Periodic Charge with notifications

When deleting a periodic charge that has any pre-charge and grace Notifications configured, a screen opens allowing you to define different notifications to be used during the period it takes to delete the charge.

1. If the periodic charge you are deleting from the **Periodic Charge** tab has pre-charge and grace notifications configured, you see the Delete Periodic Charge screen.
2. If required, change the notifications to be sent during the period before the deleted periodic charge is removed from the database.

   The following notifications may need to be configured:

   - A separate **Pre-charge notification** for every pre-charge notification already configured (up to 3)
   - A single **Grace notification** for all currently configured grace notifications; only a single grace state will be available when the periodic charge definition has been deleted; if both grace periods are defined, the single Grace period available after periodic charge definition is deleted will correspond to the second grace period.
   - **Loss of Service** notification if loss of service notification is configured in the periodic charge to be deleted
3. Click **OK** to delete the record from the database.

   Result: The Periodic Charges confirmation prompt appears. Note that once deleted, a record with the same name cannot be recreated.
4. Click **OK** to return to the **Periodic Charges** tab.

   Note: The periodic charge is still present until the final deletion date.

Note: You may search for deleted periodic charges on the **Periodic Charges** tab, by selecting the **Show Marked for Deletion** check box, then making the search. See Periodic Charges tab fields for a description of a deletion date.

Related topic

Periodic Charges

What

The what configuration configures what happens when the periodic charge runs. This can include specifying charges and/or recharges.

Topics:

What configuration fields

Adding What configuration options

Editing What configuration

What configuration fields

This table describes the function of each field on the **What** configuration option on the New or the Edit Periodic Charge screen.

Field	Description
Charge Type	The type of charge. The options are: • Debit • Debit and Credit Plan • Debit and Credit • Credit • Credit Plan • Notification Only • Control Plan The fields you can use will be defined by the type of charge you have chosen.

Debit / Debit and Credit Plan / Debit and Credit Charge Types

Field	Description
Event Class	The event class for the charge. This field is populated by the named event sets configured on the Named Event tab on the Rating Management screen. This field is available and mandatory for any Debit action.
Event Name	The event name for the charge. This field is populated by the named events configured on the Named Event tab on the Rating Management screen. This field is available and mandatory for any Debit action.

Field	Description
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge. The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made. This field is available for any Debit action.
Retain Without Credit	Selecting this option provides for excluding grace states in the event of a debit failure while continuing to retain the periodic service. Once selected, if a debit action fails, the credit due from a promotion is not implemented, but the periodic service will continue to the next "Active" state. This periodic service is only applicable to the following Charge Types: • Debit and Credit Plan • Debit and Credit By default, the check box is not selected.

Credit Plan / Debit and Credit Plan Charge Types

Field	Description
Credit Plan	The credit plan which defines the recharge and product type swap which is executed when this periodic charge is triggered. This drop down list is populated by records from the Voucher Type tab. **Note:** If the application of the voucher type's expiry policy would result in a periodic charge's expiry date being reduced (that is, moved closer) the original expiry date will not be changed. This field is available for any credit plan action.

Control Plan Charge Type

Field	Description
Control Plan	The control plan for this periodic charge to trigger. This drop down list is populated from all the control plans that have been saved with an association to the OSD operation set periodic charge.

Credit / Debit and Credit Charge Types

Field	Description
Recharge Action	Specifies from the list the way a credit is to be applied. The options are: • Replace current value with amount credited (updates existing bucket with new value) • Update using an existing bucket (updates existing bucket by increasing it by the specified value) • Add new bucket with amount (creates a new bucket to hold the new value) This field is available for any credit action. It is not available for credit plan actions.
Balance Type	The balance type to be credited with the recharge amount. This drop down list shows all chargeable balance types for the current service provider. For more information about balance types, see Balance Types. This field is available for any Credit action.
Recharge Amount	The credit recharge value, in units of the balance type. The allowed range is 1 to 4294967294. This field is available for any Credit action.
Balance Expiry Extension Days and Hours	The number of days and hours by which to extend the current balance expiry period for the balance type specified in the **Balance Type** field. Allowed range is 1 hour to 999999 days. This field is available for any Credit action where the Balance Expiry Update Policy is not set to Ignore.
Balance Expiry Update Policy	Controls how the balance's expiry date is extended by the recharge. The options are: • Best - if you want the system to select the best policy option for the subscriber depending on their particular circumstances, • Ignore - if you do not want to change the current expiry period, • Extend - if you want to extend the current expiry period by the days and hours specified, • Extend From Today - if you want the current expiry period to be the number of days and hours specified from today's date. This field is available for any Credit action.

Field	Description
Balance Offset Date (Use Offset Date)	Optional balance offset date that will be applied when the selected balance type is recharged. Creates a new bucket for the balance type that will be available from the balance offset date. To activate these fields, select the **Use Offset Date** check box, then select: • **Date** - if you want to set the balance offset date to a specific date. Select the date you want via button. • **Extension** - if you want to base the balance offset date on the current system date extended by the specified number of **Days** and **Hours**. Allowed range for days is 1-999999. Allowed range for hours is 1-23.
Wallet Expiry Extension Days and Hours	The number of days and hours by which to extend the current wallet expiry date. This field is available for any Credit charge where the Wallet Expiry Update Policy is not set to Ignore.
Wallet Expiry Update Policy	Controls how the wallet's expiry date is extended by the recharge. See the Balance Update Expiry Policy field description for the list of options. This field is available for any Credit action.

Notification Only Charge Type

No fields are available for this Charge Type.

Adding What configuration options

Follow these steps to configure what happens when the periodic charge runs.

1. In the New Periodic Charge screen, select **What** from the left hand menu.

   You see the What option fields.

2. From the **Charge Type** list, select the type of actions this periodic charge should take. The available fields on which charge type you select.

3. Configure this record by entering data in the fields on this screen as defined by the type of periodic charge you are adding.

   For an overview of the fields on this screen and when they are available, see What configuration fields.

Related topic

What

Editing What configuration

Follow these steps to view or change what happens when the periodic charge runs.

1. In the Edit Periodic Charge screen, select the **What** option from the left hand menu.

   Result: You see the What option.

2. Check or update the configuration as necessary.

   For more information about the fields in this option, see What configuration fields.

Related topic

What

When

The periodic charge when configuration sets the frequency and timing of when the periodic charge is triggered. Periodic charges which are scheduled to occur at exactly the same time are handled in alphabetical order.

For more information about how periods are calculated, see Period calculations.

Topics:

About Scheduling Periodic Charges

When configuration fields

Adding When configuration

Editing When configuration

About Scheduling Periodic Charges

You define a schedule for a periodic charge by using the periodic charge **When** option. The periodic charge schedule depends on the type of date you select in the **Based On** field. Select:

- **Fixed Date** to schedule a particular day or date that the periodic charge period will run from. For example, you could schedule a weekly charge that occurs every Friday, or you could schedule a monthly charge that occurs on the 28th day of every month, and so on.
- **Service Activation** to schedule a periodic charge based on the date that the subscriber subscribed to the periodic charge. For example, if a subscriber subscribes to a monthly periodic charge on the 15th of the month, then the next charge will occur on the 15th of the next month.
- **Wallet Activation** to schedule a periodic charge based on the date that the subscriber's wallet was activated. The date of the next charge is determined by adding the period selected for the charge to the Subscriber's wallet activation date. If this date is in the past, then this process is repeated until a date in the future is determined. For example, if the wallet is activated on 1st December 2012 and the charge period is weekly, then one week is added to the activation date to give a date for the next charge of 8th December 2012. If this date is in the past then

another week will be added, and so on, until a future date for the next charge is determined.

- **Reference Date** to schedule a periodic charge based on a specific date. You can specify a reference date that is in the past or in the future. If you specify a future date then this will be the first charge date. If you specify a past date, then the date of the first charge is determined by adding the charge period to the specified reference date, and repeating this process until a date in the future is determined.

You can specify how many times a periodic charge is applied by specifying the number of repeats for the periodic charge in the **Number of Repeats** field. For periodic charges that are based on a specified reference date, you can select whether to count the number of repeats from the reference date or from the date of the first charge. If you select to count repeats from the reference date, then the charges count from the reference date itself even if this date is in the past.

Number of repeats example:

In this example, the reference date is set to two weeks in the past, the period is set to weekly, and the number of repeats is set to three. If the number of repeats is counted from:

- The reference date, then two charges will already have been counted, and therefore the next and last charge will occur the following week.
- The date of the first charge, then the three charges will be applied from the anniversary of the period (the following week).

For more information about how periods are calculated, see Period calculations.

When configuration fields

This table describes the **When** configuration fields in the Periodic Charge screen.

Field	Description
Based On	Sets the type of date to use as a basis for scheduling the periodic charge. Select one of the following: • Fixed Date • Service Activation • Wallet Activation • Reference Data For more information, see About Scheduling Periodic Charges.
Period	Sets the frequency with which this periodic charge is run.
Custom Period	Allows you to specify the number of days or months for which a custom periodic charge should apply. **Notes:** • These fields are available only if you select `Custom` from the **Period** list. • If the custom period starts on a fixed date, and the month is set to the past, then NCC uses the specified day in the current month to calculate the period for the charge.

Field	Description
Number of Repeats	Sets the number of times to run this periodic charge. After this number of charges, the periodic charge becomes unsubscribed automatically. **Note:** The normal behavior for unsubscribing a subscriber for failed charges is not affected.
Notification Hour	Defines when to send pre-charge notifications and grace notifications. Leave this field blank if you want to send notifications at midnight (as set by the `notificationMidnightTZ` parameter in the **eserv.config** file, see *CCS Technical Guide* for more information). **Note:** The actual notification time may be influenced by other factors on the VWS.
Timezone	(Optional) Defines the time zone that will be used when applying the charge. Overrides the default time zone set by the `jnlp.sms.TZ` Java application property. For more information, see *SMS Technical Guide*. **Note:** The **Timezone** field applies only to fixed date periodic charges.
Remove Charge	Sets the number of days to allow, after sending the Loss Of Service notification, before deleting the periodic charge from the subscriber's wallet. Must be more than the number of days specified in the **Days After Failed Charge** field. If this field is not set, the periodic charge is removed after 1825 days (5 years).
Existing Subscribers	Whether this periodic charge should apply to existing subscribers. This will apply to all wallets with a specific product type when the periodic charge is applied to that product type. **Note:** You cannot apply a period charge to existing subscribers if you set **Based On** to `Service Activation`.
Activating Subscribers	Whether a named event should be charged when the wallet is activated. For more information about named events, see Named Event.
Charge Hour	Sets the hour when the charge will be applied on the charge date.
Day of Week	The full name of the day of the week on which the periodic charge should run. **Note:** Applies only if **Period** is set to weekly.

Field	Description
Day of Month	The day of the month the periodic charge should run on. Allowed values: 1-31. **Notes:** • If the charge is set to 29, 30 or 31, and is applied in a month which does not include the specified day; the charge will be applied on the last day of the month. • Applies only if **Period** is set to monthly, quarterly, half-yearly, annual, or custom.
Trigger Month	The month that the periodic charge's cycle should start on. **Note:** Applies only if **Period** is set to quarterly, half-yearly or annual.
Active	Whether or not to run the periodic charge on wallets which are in the active state.
Dormant	Whether or not to run the periodic charge on wallets which are in the dormant state.
Frozen	Whether or not to run the periodic charge on wallets which are in the frozen state.
Suspended	Whether or not to run the periodic charge on wallets which are in the suspended state.
Terminated	Whether or not to run the periodic charge on wallets which are in the terminated state.

For more information about wallet states, see Wallet states.

Notes:

- Periodic charges can be configured to apply only to some wallet states. When the periodic charge is triggered, CCS checks whether the periodic charge is allowed for the wallet state before taking any action. If the wallet state is disallowed, notifications will be skipped but the expiry logic will continue as normal (that is, the periodic charge will be processed as if the charge failed).
- Periodic charges are never applied to wallets which are in the pre-use state.

Adding When configuration

Follow these steps to configure the frequency and timing of when the periodic charge is triggered.

1. In the New Periodic Charge screen, select the **When** option from the left hand list.

   Result: You see the When option.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see When configuration fields.

Related topic

When

Editing When configuration

Follow these steps to view or change the frequency and timing of when the periodic charge is triggered.

1. In the Edit Periodic Charge screen, select the **When** option from the left hand menu.

   Result: You see the When option.

2. Check or update the configuration as necessary.

   For more information about the fields in this option, see When configuration fields.

Related topic

When

Notifications

The notifications configuration enables you to configure which notifications are sent when different periodic charge-related events occur.

Note: If a subscriber account's profile sets **Suppress Notifications** to true, no notifications will be sent, even if they are configured to be sent here. For more information about the **Suppress Notifications** field, see Details.

Topics:

Notifications fields

Adding Notifications configuration

Editing Notifications configuration

Notifications fields

This table describes the function of each field.

Pre-Charge Notifications

Note: If `None` is selected in the drop down lists:

- No notification will be sent.
- The corresponding **Days Before Charge** field is cleared and made unavailable.

Field	Description
First	A notification to send to the subscriber before the charge is applied. The corresponding **Days Before Charge** field defines how many days before the charge this notification should be sent. **Note:** If the frequency is daily, this field is not available.

Field	Description
Days Before Charge	The number of days before the periodic charge is first applied to send the notification specified in the drop down list which corresponds to this field. If this field is available, it must have a value between 1 and the periodic charge frequency measured in days, minus 1. The maximum value in days depends on the value of the **Period** and **Custom Period** fields specified in the **When** option, as follows: • Weekly: 6 • Monthly: 27 • Quarterly: 88 • Half-Yearly: 180 • Annually: 364 • Custom-Days: Days specified, minus 1 • Custom-Months: (months specified x 28), minus 1 Each field must have a lower value than the field directly above it.
Second	A notification to send to the subscriber before the charge is applied. The corresponding **Days Before Charge** field defines how many days before the charge this notification should be sent. **Note:** If the frequency is less than every 7 days, this field is not available.
Third	A notification to send to the subscriber before the charge is applied. The corresponding **Days Before Charge** field defines how many days before the charge this notification should be sent. **Note:** If the frequency is less than every 7 days, this field is not available.

Charge Notifications

Note: If `None` is selected in the drop down lists no notification will be sent.

Field	Description
Successful Charge	A notification to send to the subscriber when the charge is applied successfully.
Failed Charge	A notification to send to the subscriber when the charge is not applied successfully.
Final Success	A notification to send to the subscriber when the charge is applied successfully and it is the last time the periodic charge will run. **Note:** This field is only available if the **Number of Repeats** field in the **When** option has a value.

Grace Notifications

Notes:

- If `None` is selected for the drop down lists, the corresponding **Days After Failed Charge** field is cleared and made unavailable.
- If `No Notification` is selected for the drop down lists, the corresponding **Days After Failed Charge** field is available, but no notification will be sent.

Field	Description
First Grace	A notification to send to the subscriber when the periodic charge defined for this service has initially failed. The charges for has entered a grace period (that is, the periodic charge has failed).
Days After Failed Charge	The number of days after the periodic charge has failed to send the notification specified in the drop down list which corresponds to this field. If this field is available, it must have a value between 1 and the frequency the periodic charge is applied in measured in days -1 as shown in **Days Before Charge** field. **Notes:** This field sets the period before the periodic charge is set to Terminated, and (if there is one) the Loss of Service notification is sent.
Second Grace	A notification to send to the subscriber when the service this periodic charge defines the charges for has entered a grace period (that is, the periodic charge has failed).
Recharge Success	A notification to send to the subscriber when the subscriber successfully recharges their wallet while in a grace period (that is, the periodic charge has previously failed).
Recharge Failure	A notification to send to the subscriber when the subscriber tries to recharge their wallet while in a grace period and the recharge fails (that is, the periodic charge has previously failed and has failed again).

Loss of Service Notification

Notes:

- If `None` is selected for the drop down list, the corresponding **Days After Failed Charge** field is cleared and made unavailable.
- If `No Notification` is selected for the drop down list, the corresponding **Days After Failed Charge** field is available, but no notification will be sent.

Field	Description
Loss of Service	A notification to send to the subscriber when their service has been discontinued (that is, this periodic charge has failed and exited any available grace period).
Days After Failed Charge	The number of days after a subscriber's service has been disabled to send the Loss of Service notification. Must be greater than the Days After Failed Charge for the Second Grace notification (or First Grace if Second Grace is not set).

Note: The drop down lists on this screen are populated by the Type records configured in the CCS Application set in the **Notifications** tab on the ACS Configuration screen. For more information about the ACS Configuration screen, see *ACS User's Guide*.

Adding Notifications configuration

Follow these steps to configure the notifications which can be sent out by a periodic charge.

1. In the New Periodic Charge screen, select the **Notifications** option from the left hand list.

   Result: You see the Notifications option.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Notifications fields.

Related topic

Notifications

Editing Notifications configuration

Follow these steps to view or change the notifications configuration.

1. In the Edit Periodic Charge screen, select the **Notifications** option from the left hand menu.

   Result: You see the Notifications option.

2. Check or update the notifications as necessary.

   For more information about the fields in this option, see Notifications fields.

Related topic

Notifications

Subscription Pro-Rating

The subscription pro-rating configuration allows periodic services to be seamlessly charged from the subscription start in a manner that is transparent to the service being offered by the operator.

Topics:

Subscription configuration fields

Adding Subscription configuration

Subscription configuration fields

Field matrix

Subscription configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge
Charge Type	The type of charge. The options are: • Debit • Debit and Credit Plan • Debit and Credit • Credit • Credit Plan The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The Pro-rating method to apply. Options are: • **None** - No pro-rating at all, charges are applied without respecting the actual date and periodic charge start time. • **Proportional** - The actual date defines the start of the subscription period, the charge to be applied is defined by calculating the remaining period of the subscription from the start point to the end of the subscription period using the defined granularity units. This is then applied as a percentage reduction to the full subscription charge or subscription elements (for example, bundles). • **Proportional and Fixed** - This is calculated in exactly the same manner as proportional, described above, but an option to add a fixed additional subscription charge or appropriate elements such as SMSs in a bundle is made. This charge has optional units, either in currency or in additional periodic units.
Use Unique First Charge	Allow an initial charge that differs from subsequent charges. **Note:** This charge is a substitute for the first charge. It will also be pro-rated if specified, unlike the fixed charge which is not pro-rated.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the Named Event tab on the Rating Management screen. This field is available and mandatory for any Debit charge.

Field	Description
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the Named Event tab on the Rating Management screen. This field is available and mandatory for any Debit charge.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made. This field is available for any Debit charge.

Adding Subscription configuration

Follow these steps to configure the subscription pro-rating for a periodic charge.

1. In the New Periodic Charge screen, select the **Subscription Pro-Rating** option from the left hand list.

   Result: You see the Subscription Pro-Rating option.

2. Select the **Pro-Rating Type** from the drop down list. See Subscription configuration fields for the options and their usage.

3. Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added.

   For an overview of the fields on this screen, see Subscription configuration fields.

   Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.

4. Select the **Use Unique First Charge** check box if the initial charge differs from the subsequent charges.

5. Click **Save**.

Related topic

Subscription Pro-Rating

Editing Subscription configuration

Follow these steps to view or change the subscription pro-rating configuration.

1. In the Edit Periodic Charge screen, select the **Subscription Pro-Rating** option from the left hand menu.

   Result: You see the Subscription Pro-Rating option.

2. View or update the subscription pro-rating as necessary.

For more information about the fields in this option, see Subscription configuration fields.

Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.

3. Click **Save**.

Related topic

Subscription Pro-Rating

Field matrix

This table describes the relationships between the pro-rating actions and the field sets available.

Charge Type	Subscription	Charge Alignment	Unsubscription	Pro-Rating Types
Debit Debit and Credit Plan Debit and Credit	First Charge	NA	NA	None Proportional
Debit Debit and Credit Plan Debit and Credit	First Charge Fixed Charge	NA	Fixed Charge	Proportional & Fixed Charge
Credit Credit Plan	NA	NA	NA	None Proportional
Credit Credit Plan	Fixed Charge	Fixed Charge	Fixed Charge	Proportional & Fixed Charge
Notification Only Control Plan	NA	NA	NA	None Proportional Proportional & Fixed Charge

Charge Alignment Pro-Rating

Charge Alignment configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge

Field	Description
Charge Type	The type of charge. The available options are: • Debit • Debit and Credit Plan • Debit and Credit • Credit • Credit Plan The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The pro-rating method to apply. If the periodic charge is based on: • 'Fixed Date' or 'Wallet Activation' then pro-rating method will be None • 'Service Activation' or Reference Date' then all pro-rating methods will be available The available options are: • None • Proportional • Proportional and Fixed **Note:** Charge alignment pro-rating can only be performed for fixed charges. Other options prevent the configuration from being set up.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the Named Event tab on the Rating Management screen.
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the Named Event tab on the Rating Management screen.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance. • Do not make charge - No charge is made.

Adding Charge Alignment configuration

Follow these steps to configure the charge alignment pro-rating for a periodic charge subscription.

1. In the New Periodic Charge screen, select the **Charge Alignment Pro-Rating** option from the left hand list.

   Result: You see the Charge Alignment Pro-Rating option.

2. Select the **Pro-Rating Type** from the drop down list. See Charge Alignment configuration fields for the options and their usage.
3. Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added.

   For an overview of the fields on this screen, see Charge Alignment configuration fields.

   Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.
4. Click **Save**.

Related topic

Charge Alignment Pro-Rating

Editing Charge Alignment configuration

Follow these steps to view or change the charge alignment pro-rating configuration.

1. In the Edit Periodic Charge screen, select the **Charge Alignment Pro-Rating** option from the left hand menu.

   Result: You see the see Charge Alignment Pro-Rating option.
2. View or update the charge alignment pro-rating as necessary.

   For more information about the fields in this option, see Charge Alignment configuration fields.

   Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.
3. Click **Save**.

Related topic

Charge Alignment Pro-Rating

Unsubscription Pro-Rating

The unsubscription pro-rating configuration sets the rules for refunding "unused" amounts of the periodic charge subscription when a subscription is stopped.

Topics:

Unsubscription configuration fields

Adding Unsubscription configuration

Editing Unsubscription configuration

Unsubscription configuration fields

This table describes the function of each field.

Field	Description
Name	Name of the periodic charge

Field	Description
Charge Type	The type of charge. The available options are: • Debit • Debit and Credit • Credit The fields you can use will be defined by the type of charge you have chosen.
Pro-Rating Type	The pro-rating method to apply. The available options are: • None • Proportional • Proportional and Fixed **Note:** Unsubscribing can only be performed for fixed charges. Other options prevent the configuration from being set up.
Event Class	The event class for the charge (used for both first and all subsequent charges). This field is populated by the named event sets configured on the Named Event tab on the Rating Management screen.
Event Name	The event name for the charge (used for both first and all subsequent charges). This field is populated by the named events configured on the Named Event tab on the Rating Management screen.
Insufficient Funds Action	Specifies what will happen if there are insufficient funds to cover the charge (used for both first and all subsequent charges). The options are: • Take balance negative - The full charge will be applied, even if this results in a negative balance • Do not make charge - No charge is made

Adding Unsubscription configuration

Follow these steps to configure the unsubscription pro-rating for a periodic charge.

1. In the New Periodic Charge screen, select the **Unsubscription Pro-Rating** option from the left hand list.

   Result: You see the Unsubscription Pro-Rating option.

2. Select the **Pro-Rating Type** from the drop down list. See Unsubscription configuration fields for the options and their usage.

3. Configure this record by entering data in the fields on this screen as defined by the type of periodic charge and rating being added.

   For an overview of the fields on this screen, see Unsubscription configuration fields.

   Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.

4. Click **Save**.

Related topic

Unsubscription Pro-Rating

Editing Unsubscription configuration

Follow these steps to view or change the unsubscription pro-rating configuration.

1. In the Edit Periodic Charge screen, select the **Unsubscription Pro-Rating** option from the left hand menu.

   Result: You see the Unsubscription Pro-Rating option.

2. View or update the unsubscription pro-rating as necessary.

   For more information about the fields in this option, see Unsubscription configuration fields.

   Note: The **Charge Type** and **Pro-Rating Type** dictate the fields that can be use for pro-rating. See Field matrix.

3. Click **Save**.

Related topic

Unsubscription Pro-Rating

6

Rating Management

This chapter explains how to manage the rates for a service provider.

This chapter contains the following topics.

Rating Management Module

Tariff Plan

Tariff Plan Selector

Rate Tables

Importing and Exporting Rate Data

Rounding During Rating Calculations

Discount Sets

Deriving a CLI-DN Tariff for a Call

CLI-DN

Configuring CLI-DN Tariffs

Weekly Tariffs

Holiday Tariffs

Named Event

Discount Periods

Charge Periods

Balance Type Cascades

Expenditure Plan

Cross Balance Type Cascades

Reservation Config

Low Credit Notification Config

Tax Plan

Dynamic Quota Config

Rating Management Module

The Rating Management screen lets you configure the rates that can be applied to subscribers on the VWS domain.

For information about how CCS charges, see Rating and Tariffs.

Note: The Rating Management screen is only available if the CCS Rating Management module has been installed on your system and if you are using the VWS. If you are using a 3rd party domain, then you will not be able to access this screen.

Components

The Rating Management screen contains the following tabs:

- Balance Type Cascades
- Charge Periods
- CLI-DN
- Cross Balance Type Cascades
- Discount Periods
- Discount Sets
- Expenditure Plan
- Holiday Tariffs
- Named Event
- Rating Management - Named Event Catalogues
- Rate Tables
- Reservation Config
- Tariff Plan
- Tariff Plan Selector
- Weekly Tariffs
- Dynamic Quota Config

Accessing the Rating Management screen

Follow these steps to open the Rating Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > Rating Management**.

   Result: You see the Rating Management screen.

Tariff Plan

The **Tariff Plan** tab lets you set up and maintain tariff plans for the selected customer.

The tariff plan is used in the Control Plans option of the product type to select the tariff plan to use in the Attempt Termination with Billing nodes.

Once a tariff plan has been created, assign these items to it in the Tariff Plan Selector:

- Rate table
- Named event catalogue
- Effective date

Topics:

Tariff Plan fields

Adding tariff plans

Editing tariff plans

Deleting tariff plans

Tariff Plan fields

This table describes the function of each field.

Field	Description
Name	The name of the tariff plan. **Notes:** • Tariff plan names must be unique within a customer's set of tariff plans. • Special characters and case do not make a distinction between names. For example, Super Savers is the same as Super Saver's. • This is a mandatory field.
Name Announcement Set	The announcement set containing the announcement entry you want to play.
Name Announcement Entry	The entry name for the announcement to be played when the tariff plan is selected by the Tariff Plan Announcement node. **Note:** Announcement sets and their entries are configured in the ACS Configuration screen. Refer to *ACS User's Guide* for details.

Adding tariff plans

Follow these steps to add a new tariff plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Tariff Plan** tab, click **New**.

   Result: You see the New Tariff Plan screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tariff Plan fields.
4. Click **Save**.

Related topic

Tariff Plan

Editing tariff plans

Follow these steps to edit an existing tariff plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Tariff Plan** tab, select the tariff plan to edit.
3. Click **Edit**.

   Result: You see the Edit Tariff Plan screen.
4. Make the required changes to the fields.

   For more information on this screen, see Tariff Plan fields.
5. Click **Save**.

Related topic

Tariff Plan

Deleting tariff plans

Follow these steps to delete an existing tariff plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Tariff Plan** tab, select the tariff plan to delete.

   Tip: You cannot delete a tariff plan which is being used by a tariff plan Selector.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result:

   - If the tariff plan is not used by a tariff plan selector, the record is deleted and you see the tariff plans prompt.
   - If the tariff plan is used by a tariff plan selector, you see an error dialog.

     In this case, you first need to change the tariff plan selected on the Edit Tariff Plan Selector screen for the **Tariff Plan Selector** tab, before you can delete the record.
5. Click **OK**.

Related topic

Tariff Plan

Tariff Plan Selector

The **Tariff Plan Selector** tab allows you to set up and maintain the details for tariff plans for the selected customer. The tariff plan selector enables you to:

- Link a rate table and a named event catalogue to a tariff plan
- Specify from when the tariff plan will be effective

Topics:

Tariff Plan Selector fields

Adding tariff plan selectors

Editing tariff plan selectors

Deleting tariff plan selectors

Tariff Plan Selector fields

This table describes the function of each field.

Field	Description
Tariff Plan	The tariff plan to which a rate table, named event catalogue and effective date will be assigned.
Rate Table	The rate table which will be assigned to the selected tariff plan. **Note:** This list will display all the rate tables a service provider can use.
Named Event Catalogue	The named event catalogue to assign to the selected tariff plan. This field is populated by the records on the **Named Event Catalogue** tab. For more information, see Named Event Catalogue. **Note:** Select the special value "Use Default" to always use the current default named event catalogue in the selected tariff plan.
Effective Date	The year, month, day and hour at which the tariff plan will begin to use the rate table. **Tip:** Setting the effective date to a past date will make the change effective immediately.

Adding tariff plan selectors

Follow these steps to add a new tariff plan selector.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Tariff Plan Selector** tab, click **New**.

   Result: You see the New Tariff Plan Selector screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tariff Plan Selector fields.
4. Click **Save**.

Related topic

Tariff Plan Selector

Editing tariff plan selectors

Follow these steps to edit an existing tariff plan selector.

1. In the Rating Management window, select the service provider from the **Service Provider** list.

2. In the table on the **Tariff Plan Selector** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Tariff Plan Selector screen.
4. Edit the details as described in Tariff Plan Selector fields.
5. Click **Save**.

Related topic

Tariff Plan Selector

Deleting tariff plan selectors

Follow these steps to delete an existing tariff plan selector.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Tariff Plan Selector** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record will be deleted and you see the Tariff Plan Selector prompt.
5. Click **OK**.

Related topic

Tariff Plan Selector

Rate Tables

The **Rate Tables** tab lets you set up and maintain rate tables. It also provides the facility to import and export rate table data. See Importing and Exporting Rate Data for details.

Rate tables are used to map currency to a geography set and a holiday set.

- Geography set: an ACS reusable resource set, defining the set of geographies. Each single Geography is based on an E.164 number range.
- Holiday set: an ACS reusable resource set, representing the calendar of predefined annual holidays.

These are then used in the **Tariff Plan Selector** tab to assign rate tables and effective dates to tariff plans.

When a call is made, the system uses the rate table for the wallet/product type to determine:

1. The basic tariff for that rate table (these are the CLI DN tariffs)
2. Any weekly tariffs that may apply
3. Any holiday tariffs that may apply

There is no limitation on the number of rate plans that can be defined. You can set a rate plan for a number range or an individual.

Holiday tariffs override any weekly tariff that may apply to the call and weekly tariffs override charges set in the CLI-DN tariffs.

For more information about setting up geography sets and holiday sets, see *ACS User's Guide*.

Topics:

About testing new rate tables

Rate Tables fields

Adding rate tables

Editing rate tables

Deleting rate tables

About testing new rate tables

You can test your rating configuration by performing a test call at a date and time that you specify in the CCS Call Date profile field. This feature allows you to test key elements of the rating system, such as:

- Time of day tariffs
- Day of week tariffs
- Holiday tariffs

The CCS Call Date profile field is held in temporary storage. You can set it to a specific date and time by using a Set feature node prior to the UATB feature node in your control plan. When set, the current system date and time will be overwritten by the profile field value in message requests sent to the VWS by the UATB feature node.

For more information about the UATB feature node, see the *Feature Nodes Reference Guide*. For more information about configuring control plans, see *Control Plan Editor User's Guide*.

Rate Tables fields

This table describes the function of each field.

Field	Description
Based on Rate Table	The rate table used to define the new rate table. **Note:** The charge period sets belonging to the rate table selected in the **Base on Rate Table** field will be copied and associated with the new rate table. The charge period detail for the copied charge period sets will be retained and the newly created charge period sets will appear in the **Charge Periods** tab.
Default Reservation Config	This indicates what the default reservation values are. The default reservation parameters are configured in **SMS > Services > Prepaid Charging > Rating Management, Reservation Config** tab

Field	Description
Rate Table	The name of the new rate table. **Notes:** • Tariff plan names must be unique within a customer's set of tariff plans. • Special characters and case do not make a distinction between names. For example, Super Savers is the same as Super Saver's. • This is a mandatory field.
Geography Set	The geography set which this rate table will map a currency to. **Notes:** • All rate tables must have a geography set selected for them. This list displays all the geography sets which a customer can use. If no geography sets are displayed, geography sets must first be created and assigned to the customer. Geography sets are created using the ACS Configuration screen. Access to public sets is assigned using the Service Provider Details screen. For details on creating geography sets, see *ACS User's Guide*.
Holiday Set	The holiday set which this rate table will map a currency to. **Notes:** • All rate tables must have a holiday set selected for them. This list box displays all the holiday sets which a customer can use. If no holiday sets are displayed, holiday sets must first be created and assigned to the customer. Holiday sets are created using the ACS Configuration screen. Access to public sets is assigned using the Service Provider Details screen. For details on creating holiday sets, see *ACS User's Guide*.
Billing Indicator	This indicates whether the rate table is time or data based. **Note:** This is used for display purposes, and does not affect the rating, just what is displayed. The effect of the billing indicator when changing from a data unit to a time value is to display the rate per minute instead of per second. Hence the time rate will be 60x the data rate.

Adding rate tables

Follow these steps to add a new rate table.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Rate Tables** tab, click **New**.

Result: You see the New Rate Table screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Rate Tables fields.

4. Click **Save**.

Related topic

Rate Tables

Editing rate tables

Follow these steps to edit an existing rate table.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Rate Tables** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Rate Table screen.

4. Edit the details as described in Rate Tables fields.
5. Click **Save**.

Related topic

Rate Tables

Deleting rate tables

Follow these steps to delete an existing rate table.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Rate Tables** tab, select the record that you want to delete.

   Note: You cannot delete a rate table which is associated with a billing period, CLI-DN, discount set, holiday, week, or a tariff plan selector.

3. Click **Delete**.

   The Delete Confirmation prompt appears.

4. Click **OK**.

   The rate table is deleted from the database and the prompt appears.

   Note: An error displays if the rate table is associated with any of the following data: a billing period, CLI-DN, discount set, holiday, week, or a tariff plan selector. Remove the associations to the rate table by editing the relevant data on the other tabs in the Rating Management window before attempting to delete the record again.

5. Click **OK**.

Related topic

Rate Tables

Importing and Exporting Rate Data

The **Import** and **Export** buttons on the **Rate Tables** tab allow you to import and export rate tables and associated public data. Use this facility to create and modify rate data externally, using third party tools, before importing it into the system.

Note: Rate data is exported to a file and imported from a file in XML format. Refer to the files in the **/IN/html/Ccs_Service/xml/rateTable** directory on the SMS for more information.

Data import

Use the import facility to import the following data from a file:

- New rate tables
- New public data
- Updates to existing public data

When you import rate data, the import file is pre-parsed to check that it conforms to the import file specification.

When there are errors in the import file, the following occurs:

- The import process fails
- Any database changes are rolled back
- Details about the import file lines or sections that contain errors are reported to the user

Warning: You cannot update existing rate tables or delete rate data using this facility.

Importing rate data

Follow these steps to import rate data from file.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Rate Tables** tab, click **Import**.

   Result: You see an Import screen.
3. Select the folder which holds the import file.
4. In the **File name** field, type the import file name.

   Warning: The import file type must be XML.
5. Click **Import**.

   Result: You see the Rate Table Import Confirmation screen.
6. Click **Continue**.

   Result: You see the Import successful prompt.

   Note: If there are errors in the XML file, a list of the errors in the XML file will be displayed instead of the Import successful prompt. Correct these errors and click **Import** to try again.

7. Click **OK**.

Data export

Use the export facility to export a rate table or the public data associated with rate tables to a specified file.

When you export a rate table, the system exports all data that is privately related to the selected rate table, including:

- Name of the geography set being used
- CLI-DN listings and related tariffing details
- Rate table specific charge periods
- Associated weekly and holiday discount sets

When you export public data, the system exports all data that is publicly available to any rate table set up for this service provider, including:

- Public charge periods
- Balance type cascades
- Public discount periods
- Named events

Exporting a rate table

Follow these steps to export a rate table and its related data to file.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Rate Tables** tab, select the rate table to export and click **Export**.

   Result: You see the Export Rate Table or Public Data prompt.
3. Click **Rate Table**.

   Result: You see an Export screen.
4. Select the folder in which you want to store the export file.
5. In the **File name** field, type the export file name.

   Warning: The export file type must be set to XML.
6. Click **Export**.

   Result: You see the Export successful prompt.
7. Click **OK**.

Exporting public data

Follow these steps to export public data to file.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Rate Tables** tab, click **Export**.

Result: If a rate is currently selected on the tab, you see the Export Rate Table or Public Data prompt. Click **Public Data**.

3. If none of the rates on the tab were selected, or you clicked **Public Data**, you see an Export screen.
4. Select the folder in which you want to store the export file.
5. In the **File name** field, type the export file name.

   Warning: The export file type must be set to XML.
6. Click **Export**.

   Result: You see the Export successful prompt.
7. Click **OK**.

Rounding During Rating Calculations

Rounding is applied to rating calculations when a voice call or data session is charged by CCS and the Voucher Wallet Servers (VWS).

NCC uses the following process to convert the units to be charged into a cost:

1. Determine the number of units to be charged, which takes into account the number of units already committed or charged and might be adjusted, for example, to suit the minimum call length definition.
2. Round the units up to the nearest multiple of the Billing Resolution.

   For example, for units to be charged of 22.5 seconds:

   - If Billing Resolution is 1 second, then the rounded units is 23 seconds
   - If Billing Resolution is 10 seconds, then the rounded units is 30 seconds
3. Multiply the units by the rate or rates defined for the Billing Periods.
4. Apply rounding to the calculated cost. You can apply any one of the following rounding methods:

   - Bankers
   - Ceiling
   - Commercial

Notes:

- This basic scenario can be complicated by using billing periods with different tariffs, cross balance tariffs, and so on. However, the rounding that is applied is fundamentally the same.
- Charging can occur at the end of a call or throughout the call, depending on the Commit Volume Threshold defined in the Reservation Configuration used to rate the call. If Mid-Session Commit is enabled, rounding occurs at each charge commit.
- Although rounding is applied at every interim commit, before rounding is applied, at each stage, the committed totals are first adjusted by the remainders from the previous commit, in such a manner that the total committed units for the call are the same as they would have been for an equivalent call with just one commit stage.

Banker's Rounding

NCC applies bankers rounding, also known as symmetric rounding, to the calculated cost of a call or data session.

Bankers rounding is a way of performing neutral rounding of higher precision values to lower precision values. When converting floating point values to integers, it works as follows:

- Values with a fractional part above 0.5, round up to the nearest whole number
- Values with a fractional part below 0.5, round down to the nearest whole number
- Values with a fractional part equal to 0.5, round to the nearest *even* whole number

For example:

- 3.50 will be rounded to 4
- 4.25 will be rounded to 4
- 4.50 will be rounded to 4
- 4.75 will be rounded to 5
- 5.50 will be rounded to 6

Note: Rounding to the nearest even whole number guarantees neutral, or fair, rounding with a large sample.

Ceiling Rounding

Ceiling rounding is a form of Round-Towards-Infinity rounding that you can apply to any fractional part.

With ceiling rounding, you can round fractional parts to Unit-Smalls(1s), Deca-Smalls(10s), and Hecto-Smalls(100s).

Fractional Small	Ceiling Rounded to Unit Small	Ceiling Rounded to Deca Small	Ceiling Rounded to Hecto Small
-11.1	-12	-20	-100
-1.1	-2	-10	-100
-0.9	-1	-10	-100
-0.5	-1	-10	-100
-0.1	-1	-10	-100
+0.1	+1	-10	+100
+0.5	+1	+10	+100
+0.9	+1	+10	+100
+1.1	+2	+10	+100
+11.5	+12	+20	+100

In ceiling rounding, rounding granularity is determined by a rounding factor, RF, derived from the number of decimal places that you specify.

The Rounding Factor RF is given by the following formula:

10^(MaxDP - DP)

where, MaxDP is the maximum number of decimal places, and DP is the decimal places you specify.

For example, in an installation with a currency base of 10000, you can apply rounding with granularity up to 4 decimal places:

Decimal Places	Value	Rounded Value
0	10000.1	20000 (round up units)
1	01000.1	02000
2	00100.1	00200
3	00010.1	00020
4	00001.1	00002 (round up subunits)

The following table shows the rounding factors for a system currency base of 10000:

Decimal Places	Applied Formula	Rounding Factor
0	10^(4 - 0)	10000
1	10^(4 - 1)	1000
2	10^(4 - 2)	100
3	10^(4 - 3)	10
4	10^(4 - 4)	1

RF is used to apply to a number, n, the ceil() function with a potentially higher granularity than simple unit rounding through the following formula:

n' = RF*(ceil(n/RF))

For example, if n = 10001 and RF = 10000, then:

n' = 10000*(ceil(10001/10000))

= 10000*(ceil(1.0001))

= 10000*(2)

= 20000

Commercial Rounding

Commercial rounding rounds positive .5 upwards and negative .5 downwards.

For example:

- -2.5 will be rounded to -3
- -0.5 will be rounded to -1
- +0.5 will be rounded to +1
- +2.5 will be rounded to +3

Example: Single Charge Per Call

The following examples illustrate how rounding is applied for a single charge per call. The following conditions apply:

- Mid-session commit (Reservation Configuration) is not configured
- Minimum Call Length: 0 seconds (CLI-DN Tariff)
- Billing Resolution: 1 second (CLI-DN Tariff)
- Rate: 15c/min (Billing Period)
- Duration is 49.1s and cost is 12c

The rating calculation is as follows:

- units to charge = 49.1s
- units rounded up = 50s
- cost (units * rate) = 50 * (15/60) = 50/4 = 12.5c
- cost after bankers rounding = 12c

Example: Multiple Charges Per Call

The following examples illustrate how rounding is applied for a call with multiple charges:

- Mid-session commit - Commit Volume Threshold: 20 seconds (Reservation Configuration)
- Minimum Call Length: 0 seconds (CLI-DN Tariff)
- Billing Resolution: 1 second (CLI-DN Tariff)
- Rate: 15c/min (Billing Period)
- Total duration is 52.1s and cost is 13c

The rating calculation is as follows:

1. Processing first Subsequent Reservation (SR) Request
   - call duration = 29.7s
   - units to charge = 29.7s
   - units rounded up = 30s
   - cost (units * rate) = 30 * (15/60) = 30/4 = 7.5
   - cost after bankers rounding = 8c
2. Processing second SR
   - call duration = 36.5s
   - already charged for 30 seconds, so units to charge = 6.5s
   - 6.5s is less than Commit Threshold of 20s so the units are not committed
3. Processing third SR
   - call duration = 50.6s
   - already charged for 30s, so units to charge = 20.6s
   - units rounded up = 21s
   - cost = 21/4 = 5.25c
   - cost adjustment = 5.25 - 0.5c = 4.75c
   - cost after bankers rounding = 5c

4. Processing Commit Reservation (CR) Request
   - call duration = 52.1s
   - already charged for 51s, so units to charge = 1.1s
   - units rounded up = 2s
   - cost = 2/4 = 0.5c
   - cost adjustment = 0.5c - 0.25c = 0.25c
   - cost after bankers rounding = 0c

Note: When committing funds during the call, an adjustment is made to the subsequent charges for any rounding that has taken place in the previous charge.

Example: Single Charge Per Call with Rate Change During Call

The following examples illustrate how rounding is applied for a single charge per call with a rate change during the call:

- Mid-session commit - Commit Volume Threshold: 20 seconds (Reservation Configuration)
- Minimum Call Length: 0 seconds (CLI-DN Tariff)
- Billing Resolution: 1 second (CLI-DN Tariff)
- Rates: 15c/min for first 60s, 10c/min after the first 60s (Billing Period)
- Total duration is 110.1s and cost is 24c

The rating calculation is as follows:

- Processing Commit Reservation (CR) Request
- call duration = 110.1s
- units rounded up = 111s

The charge for the first 60s is calculated as:

- units to charge = 60s
- cost (units * rate) = 60 * (15/60) = 60/4 = 15c

The charge for the remaining duration is calculated as:

- already charged for 60s so units to charge is 51s
- cost (units * rate) = 51 * (10/60) = 51/6 = 8.5c

The total charge = 15 + 8.5 = 23.5c

- cost after bankers rounding = 24c

Discount Sets

The **Discount Sets** tab lets you add, modify, and delete discount sets.

Discount sets are placeholder records which are used to connect rate tables and discounts. Discount sets are used by the following tariffs:

- CLI-DN

- Weekly Tariffs
- Holiday Tariffs

Topics:

Discount Sets fields

Adding discount sets

Editing the discount sets

Deleting discount sets

Discount Sets fields

This table describes the function of each field.

Field	Description
Rate Table	Displays the rate table selected on the **Discount Sets** tab.
Name	The name of the discount set.
Description	A brief description of the discount set.

Adding discount sets

Follow these steps to add a new discount set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Sets** tab, select, from the **Rate Table** drop down box, the rate with which to associate a discount set.
3. Click **New**.

   Result: You see the New Discount Set screen.

   The **Rate Table** field displays the rate table selected in step 2.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Discount Sets fields.
5. Click **Save**.

Related topic

Discount Sets

Editing the discount sets

Follow these steps to edit an existing discount set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Discount Sets** tab, select the discount set to edit.
3. Click **Edit**.

Result: You see the Edit Discount Set screen.

4. Edit the details as described in Discount Sets fields.
5. Click **Save**.

Related topic

Discount Sets

Deleting discount sets

Follow these steps to delete an existing discount set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Discount Sets** tab, select the discount set to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Discount Sets prompt.
5. Click **OK**.

Related topic

Discount Sets

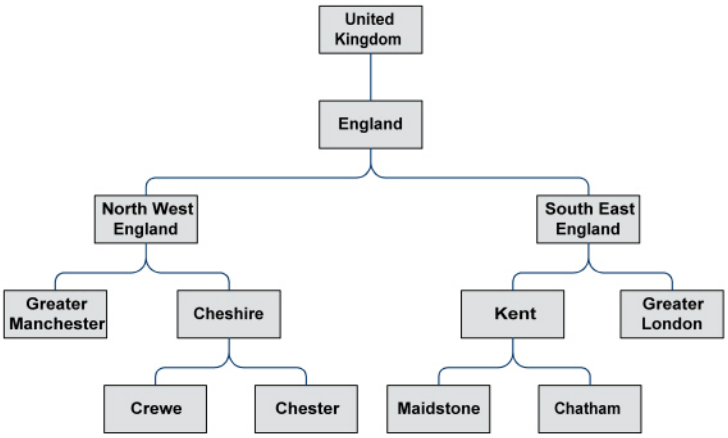
Deriving a CLI-DN Tariff for a Call

The CLI-DN tariff for a call is always chosen according to the closest matching link across a geography set. The system searches for:

1. a direct link first, then
2. looks for the nearest available link if a direct link is not available.

If no link between the two points is recognized, the call is disconnected. Location is based on the CC Calling Network Address tag from the call context profile.

Example: This diagram demonstrates the algorithm for obtaining the tariff. For simplicity's sake, all calling significant entries are on the left of England and all destination significant entries are on the right.



Calling number X destination number

The following table shows the links that are available for mapping calls.

Calling Number	Destination Number
North West England	Maidstone
North West England	Kent
Cheshire	Greater London
Cheshire	South East England
Chester	South East England

Destination geography map

The following table shows the links mapping DN (Destination Numbers).

Significant_Entry	Lowest_Entry	Level	Usage
Greater London	Greater London	3	1
Kent	Chatham	3	1
Kent	Maidstone	3	1
Maidstone	Maidstone	4	1
South East England	Chatham	2	2
South East England	Greater London	2	2
South East England	Maidstone	2	2

Calling geography map

The following table shows the links mapping CLI (Calling Line Identifiers).

Significant_Entry	Lowest_Entry	Level	Usage
Cheshire	Chester	3	2
Cheshire	Crewe	3	2
Chester	Chester	4	1
North West England	Chester	2	2

Significant_Entry	Lowest_Entry	Level	Usage
North West England	Crewe	2	2
North West England	Greater Manchester	2	2

First attempt

A call made from Crewe to Maidstone does not have a direct link mapped. Failing to find a link to Maidstone, the system will search for the most direct link. An attempt is made at each location along the same branch as Maidstone. The DNs on the Maidstone branch of the geography tree are Kent and South East England. There are no direct links from Crewe to either of these destinations.

DN significant entry

The following table shows the destination significant entries on the geography tree. A destination significant entry is a destination or the parent entry of a destination, or any parent entry of any destination significant entry.

Destination Significant Entry	Level
Maidstone	4
Kent	3
South-East England	2

Second attempt

The system then searches from the next CLI along the same branch as Crewe, in an attempt to make a direct link.

The CLIs on the Crewe branch of the geography tree are Cheshire and North West England. There is no direct link from Cheshire to Kent, but there is a link from Cheshire to South East England (see Destination geography map). There is then no need to search for any links from North West England. The system will charge the call using Cheshire to South East England as the CLI-DN Tariff.

CLI significant entry

The following table shows the calling significant entries on the geography tree. A calling significant entry is a CLI (calling location) or the parent entry of a CLI, or any parent entry of any calling significant entry.

Calling Significant Entry	Level
Cheshire	3
North West England	2

CLI-DN

The **CLI-DN** tab lets you set up and maintain Calling Line Identifier (CLI) to Dialed Number (DN) tariffs for the selected customer. For more information, refer to Deriving a CLI-DN Tariff for a Call.

Once a CLI-DN tariff has been created for a rate table, it may be used by a tariff plan to set geographical area to geographical area tariffs. The tariffs set in the **CLI-DN** tab are the basic tariffs that are used for the rate table. These are the tariffs that will be used for a call, unless it is overridden by Weekly Tariffs or Holiday Tariffs.

Finding CLI-DN tariffs

Follow these steps to search for the CLI-DN tariffs for a selected rate table.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **CLI-DN** tab, select the **Rate Table** to search from the drop down list.

   Result: You see the geography set for the selected rate table in the top half of the screen.
3. If required, select the CLI to search on from the list and click **Set**.
4. If required, select the DN to search on from the list and click **Set**.
5. Click **Search**.

   Result: The CLI-DN tariffs that have be defined for the rate table and that match the search criteria are displayed in the table. Only the first 1000 matching records are returned.

   Notes:

   - If you leave both the CLI and DN fields empty when specifying your search criteria then all the configured CLI-DN tariffs will be returned for the rate table.
   - If you select either a CLI or a DN to search on, then the results will be restricted to the CLI-DN tariffs which exactly match the selected CLI or DN.
   - If you select a CLI and a DN to search on, the results will only include CLI-DN tariffs which exactly match both the selected CLI and the selected DN.

Using the CLI-DN tab

You use the **CLI-DN** tab to search for, and configure CLI-DN tariffs.

The tab operates as a split screen. In the top half of the screen you see:

- The selected rate table.
- A tree structure showing the geographical areas assigned to the rate table.
- The CLI and DN search fields.

In the bottom half of the screen you see a table for the search results. The CLI-DN tariffs that match the search criteria and that have been configured for the selected rate table are listed in the table.

You can expand either half of the screen to fill more of the tab by clicking on the up and down arrows between the two halves:

- To expand the top half of the screen to see more geographical areas, click the down arrow.
- To expand the bottom half of the screen to see more CLI-DN tariffs, click the up arrow.

Configuring CLI-DN Tariffs

You can configure any of these types of tariffs:

- Single tariff
- Multi-tariff

Topics:

Multi-tariff CLI-DNs

Accessing the New CLI-DN Tariff screen

CLI-DN tariff fields

Using the New/Edit CLI-DN Tariff screen

Adding a single tariff CLI-DN

Editing a single tariff CLI-DN

Adding a multi-tariff CLI-DN

Adding a new multi-tariff charge

Editing a multi-tariff CLI-DN

Deleting CLI-DNs

Multi-tariff CLI-DNs

Multi-tariff CLI-DNs provide the facility to split the CLI-DN tariff into its different revenue components. Each revenue component is identified by a specific service id and the tariff charging details are associated with it.

Whenever an EDR is generated from the CLI-DN tariff, it will include the revenue details for each service ID. This information can then be used for accounting purposes.

Accessing the New CLI-DN Tariff screen

You use the New CLI-DN Tariff screen to configure new:

- Single tariff CLI-DNs
- Multi-tariff CLI-DNs

Follow these steps to access the New CLI-DN Tariff screen.

1. In the Rating Management window, select the service provider from the **Service Provider** list.

2. On the **CLI-DN** tab, select the rate table from the drop down list for which you want to configure a CLI-DN tariff.

   Result: You see a tree structure in the top half of the screen. It shows the geography set for the rate table and the list of all the available geographical areas.

3. Click **New**.

   Result: You see the New CLI-DN Tariff screen.

4. To configure a single tariff CLI-DN, see Adding a single tariff CLI-DN.

5. To configure a multi-tariff CLI-DN, see Adding a multi-tariff CLI-DN.

6. Click **Save**.

CLI-DN tariff fields

This table describes the function of each field.

Field	Description
Rate Table	The rate table that the CLI-DN tariff applies to. This is set by the rate table which is selected from the **Rate Table** field in the **CLI-DN** tab when the record was first configured.
CLI	Sets the CLI area for the tariff. This is the geographical area that calls are coming from.
DN	Sets the free dialed number area for the tariff. This is the geographical area that calls are going to.
Free Call Disposition	Determines how a call is handled when a "freeCallIndicator" is received from the network. An indicator such as this is occasionally received via INAP. It informs CCS that the call should be free, regardless of any defined tariff. CCS can handle a "freeCallIndicator" in one of three ways: • Release a Call. It can release the call if it was told the call should be free. • Honour. It can take notice of the indication, and give the call for free (that is, honor the indication). • Ignore. It can ignore the indication and carry on and charge the call as defined in the tariffs. **Note:** Not applicable to CAMEL/ISUP networks.
Maximum Charge	Sets the maximum amount that may be charged for calls made using this tariff. The unit of currency is displayed in brackets in the field name. **Warning:** A value of zero (0) or a blank field means that there is no maximum charge.
Minimum Length (secs), Minimum Volume (data units)	Sets the minimum volume of time (seconds) or data (data units) which will be charged for a single call, even if the caller uses less time/data. **Tip:** This must be a multiple of the billing resolution value or zero.

Field	Description
Expenditure Plan (also listed as Contributes to Expenditure)	Determines whether this CLI-DN contributes to expenditure calculations, and what expenditure plan it contributes to. This field is populated by the **Expenditure Plan** tab. For more information, see Expenditure Plan. **Tip:** When "Does Not Contribute" is selected the CLI-DN is excluded from all expenditure calculations.
Cross Balance Type Cascade	Sets the cross balance type cascade for the CLI-DN tariff. This defines when a cross balance discount may apply, and also the cross balance type cascade to debit for charged calls using this CLI-DN. For more information, see Cross Balance Type Cascades.
Tariff Code	Sets the tariff code to use for 16KHz charging. **Tip:** Tariff codes are defined on the **Tariff Codes** tab in the ACS Resources screen. For more information, see *ACS User's Guide*.
Tax Plan	Defines the tax plan to associate with this CLI-DN. **Tip:** Tax plans are define on the **Tax Plan** tab in the Rating Management screen. For more information, see Tax Plan.
Mid-call Tariff Change	A switch which controls whether to apply, or stop applying, a discount to a call on this rate after the call has started. **Tip:** When left deselected, the current discounted or non-discounted rate applies for the entire duration of the call.
Low Credit Notification Config	Defines the low credit configuration to use when explaining low credit to a subscriber. See Low Credit Notification Config.
Charge on Reservation Timeout	Select this check box to indicate that charging is to be applied for reservations that timeout. **Note:** Charge on timeout will currently only commit used units and not granted units.
Reservation Config ID	Select the applicable reservation configuration to use, as defined in the **Reservation Config** tab. For more information, see Reservation Config.
Billing Resolution (secs) Billing Resolution (data units)	Sets the unit length for billing calls either in seconds (SS) and hundredths of seconds (HH), or units of data. Uses the following format for time: SS.HH. **Example:** 1.25 (One and a quarter seconds) **Tip:** The minimum length must be multiples of the billing resolution value.

Field	Description
Balance Type Cascade (also listed as Cascade)	Sets the balance type cascade for the CLI-DN tariff. This field is populated by the records in the **Balance Type Cascades** tab. For more information, see Balance Type Cascades.
Charge Period	Sets the charge period for the CLI-DN tariff. This field is populated by the records in the **Charge Periods** tab. **Tip:** Charge periods that are not attached to a specific rate table are indicated by placing (G) after the charge period name (G for Global). For more information, see Charge Periods.
Discount Set	Sets the discount set for the CLI-DN tariff. This field is populated with the available discount sets for the selected rate table. For more information, see Discount Sets.
Service Id	A text field of up to 15 characters that sets the Service Id to use for the CLI-DN tariff. This field: • Is required for multi-tariff CLI-DNs (it is used to identify the separate revenue elements contained within the whole rate). • Is optional for single-tariff CLI-DNs.
Master Discount	Identifies the tariff for which any associated discount will be used to override the global settings as well as the local billing resolution and cascade. **Tip:** Only one of the definitions in a multi-tariff CLI-DN may be set to be the master discount tariff.

Using the New/Edit CLI-DN Tariff screen

You use the New and Edit CLI-DN Tariff screen to add new CLI-DN tariffs and edit existing ones.

Like the CLI-DN tab these screens are split into two halves. In the top half of the screen you see:

- The rate table for the CLI-DN
- A tree structure showing the geographical areas assigned to the rate table
- The CLI and DN fields

In the bottom half of the screen you see details of the CLI-DN tariff configuration.

You can expand the view of either half to fill the screen by clicking on the up and down arrows between the two halves:

- To expand the top half of the screen to see more geographical areas, click the down arrow.
- To expand the bottom half of the screen, click the up arrow.

When you add or edit a CLI-DN tariff and your cursor hovers over one of the following fields for two or three seconds, SMS displays the current configuration for the field in a popup window. This alleviates the need to obtain the information from other screens while configuring a CLI-DN tariff:

- Free Call Distribution
- Expenditure Plan
- Cross Balance Type Cascade
- Tariff Code
- Low-Credit Notification Config
- Tax Plan
- Reservation Config
- Balance Type Cascade
- Charge Period
- Discount Set

Related topic

Configuring CLI-DN Tariffs

Adding a single tariff CLI-DN

Follow these steps to add a new single tariff CLI-DN.

Tip: For more information about a particular field in the New CLI-DN Tariff screen, see CLI-DN tariff fields.

1. In the New CLI-DN Tariff screen, with the bottom half of the screen in single-tariff mode, select the **CLI** area for the tariff from the geography set in the top half of the screen and click **Set**.
2. Select the free **DN** area for the tariff from the geography set and click **Set**.
3. Configure this record by entering data in the rest of the fields on this screen.

   For more information about the fields on this screen, see CLI-DN tariff fields.
4. Click **Save**.

Related topic

Configuring CLI-DN Tariffs

Editing a single tariff CLI-DN

Follow these steps to edit an existing single tariff CLI-DN.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **CLI-DN** tab, search for the record to edit. See Finding CLI-DN tariffs for details.
3. Select the CLI-DN tariff in the table in the bottom half of the screen and click **Edit**.

Result: You see the Edit CLI-DN Tariff screen, with the bottom half of the screen in single-tariff mode.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see CLI-DN tariff fields.

5. Click **Save**.

Related topic

Configuring CLI-DN Tariffs

Adding a multi-tariff CLI-DN

Follow these steps to add a new multi-tariff CLI-DN.

Tip: For more information about a particular field in the New CLI-DN Tariff screen, see CLI-DN tariff fields.

1. In the New CLI-DN Tariff screen, from the geography set in the top half of the screen, select the **CLI** area for the tariff and click **Set**.
2. From the geography set select the free **DN** area for the tariff and click **Set**.
3. Specify values for the rest of the CLI-DN fields as described in Adding a single tariff CLI-DN.

   Note: You must enter the **Service Id** for the CLI-DN tariff.

4. Click **More**.

   Note: The **More** button becomes enabled when you enter the service Id.

   Result: You see the New CLI-DN Tariff screen re-displayed in multi-tariff mode. The tariff details you have just entered appear in the first row in the table at the bottom of the screen.

5. Click **New**.

   Result: You see the New Multi-Tariff Charge screen.

6. Add a new charge. For details, see Adding a new multi-tariff charge.
7. Repeat steps 5 and 6 until all the charges required to complete the configuration for the multi-tariff CLI-DN have been added.
8. Click **Save**.

   Note: The **Save** button only becomes enabled when all the required fields for the CLI-DN have been entered correctly.

Related topic

Configuring CLI-DN Tariffs

Adding a new multi-tariff charge

Follow these steps to add a new multi-tariff charge to a CLI-DN tariff.

Tip: For more information about a particular field, see CLI-DN tariff fields.

1. In the New Multi-Tariff Charge screen, set the **Billing Resolution** for the charge.

Note: The minimum length and low credit warning field values specified for the CLI-DN tariff must be multiples of the billing resolution value.

2. Select the **Cascade** for the charge from the drop down list.
3. Select the **Charge Period** for the charge from the drop down list.
4. Select the **Discount Set** for the charge from the drop down list.
5. Type in the **Service Id** for the charge.

   Note: This is a required field.
6. If you want to set this charge to be the master discount charge, select the **Master Discount** check box..
7. Click **Save**.

Editing a multi-tariff CLI-DN

Follow these steps to edit an existing multi-tariff CLI-DN.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **CLI-DN** tab, search for the record you want to edit. See Finding CLI-DN tariffs for details.
3. Select the multi-tariff CLI-DN in the table in the bottom half of the screen and click **Edit**.

   Tip: A multi-tariff CLI-DN is indicated in the table by a tick in the Multi-Tariffs column.

   Result: You see the Edit CLI-DN Tariff screen in multi-tariff mode.
4. Edit the following fields as required:
   - Free Call Disposition
   - Maximum Charge
   - Minimum Length
   - Low Credit Notification Config
   - Charge On Reservation Timeout
   - Expenditure Plan
   - Cross Balance Type Cascade
   - Tariff Code
   - Tax Plan
   - Mid-call Tariff Change
   - Reservation Config

   For more information about a particular field, see CLI-DN tariff fields.

   Tip: You can also reset the CLI and DN fields if required.
5. Add additional multi-tariff charges and edit existing multi-tariff charges as required:
   - To add an additional charge, click **New**.

     Result: You see the New Multi-Tariff Charge screen.

- To edit an existing charge, select it in the table at the bottom of the screen, and click **Edit**.

  Result: You see the Edit Multi-Tariff Charge screen.

6. In the New/Edit Multi-Tariff Charge screen, specify the multi-tariff charge details as described in Adding a new multi-tariff charge.
7. Delete any multi-tariff charges that are no longer required:
   - To delete a charge, select it in the table and click **Delete**.
8. Click **Save**.

Related topic

Configuring CLI-DN Tariffs

Deleting CLI-DNs

Follow these steps to delete an existing CLI-DN.

Warning: When you delete a multi-tariff CLI-DN, then all the multi-tariff charges defined for the CLI-DN are also deleted.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **CLI-DN** tab, search for the record to delete. See Finding CLI-DN tariffs for details.
3. In the table in the bottom half of the screen, select the record to delete.
4. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the CLI-DN Tariff prompt.
6. Click **OK**.

Related topic

Configuring CLI-DN Tariffs

Weekly Tariffs

The **Weekly** tab lets you set up and maintain weekly tariffs for the selected customer. You can:

- Assign a cost or volume to specified days of the week
- Assign the tariff to a rate table

Example: A tariff may be set up for a rate table so that all calls from 18:00 on Friday to 06:00 on Monday will have a maximum charge of $5.95.

Weekly tariffs override the basic tariffs that are set for the rate table in the **CLI-DN** tab.

Topics:

Weekly Tariffs fields

Adding weekly tariffs

Editing weekly tariffs

Deleting weekly tariffs

Weekly Tariffs fields

This table describes the function of each field.

Field	Description
Rate Table	The rate table assigned to this tariff. **Notes:** • The drop down list displays all the rate tables available to the customer. • This field cannot be edited after assigned to the weekly tariff.
Discount Sets	The discount set assigned to this weekly tariff. **Tip:** The drop down list displays all the discount sets available to the customer.
Start Time (GMT)	The time and day of the week when this tariff activates. **Note:** This time is in the GMT time zone.
End Time (GMT)	The time and day of the week when this tariff stops being active. **Note:** This time is in the GMT time zone.
Discount Period	The discount period you want to assign to this weekly tariff.
Maximum Charge	The maximum charge that can be applied to any call using this tariff. This value will be in the same currency as selected for the rate table in the **Rate Table** field. This may be a time based charge or a monetary unit based charge. **Warning:** If the value in this field is set to 0, calls using this tariff will not be charged. Either the **Maximum Charge** field must be populated, or both the **Initial Discount** and the **Remaining Discount** fields must contain a value greater than 0.
Minimum Length (secs/data unit)	The minimum period for which the calls will be charged for using this tariff. **Note:** This value is the minimum length of time or data that will be charged for a single call, even if the caller uses lesser time or data.

Field	Description
Billing Resolution (secs/data unit)	The unit length to use for billing calls using this weekly tariff. • For time, the unit length is defined in seconds (SS) and hundredths of seconds (HH) using the format: SS.HH • For data, the unit length is an integer. **Examples:** • Telco A, charging by the minute (rounding up to the next full minute) would have this configured as 60.00 • Telco B, charging by the second (rounding up to the next full second) would have this configured as 1.00 • Telco C, charging for each 1000 data units would have this configured as 1000
Low Credit Config	The notification template(s) to use when a credit value has reached a trigger value(s). Usually used for low credit warnings. To create or maintain these templates, see Low Credit Notification Config.
Cascade	The balance type cascade which will be assigned to this weekly tariff. **Note:** This drop down list displays all the balance type cascades available to a customer. To create new balance type cascades, see Balance Type Cascades.
Tariff Code	The tariff code to use for 16 KHz charging. The tariff codes listed are defined on the **Tariff Codes** tab in the ACS Resources screen.

Adding weekly tariffs

Follow these steps to add a new weekly tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Weekly** tab, click **New**.

   Result: You see the New Weekly Tariff screen relevant to the billing indicator.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Weekly Tariffs fields.
4. Click **Save**.

Related topic

Weekly Tariffs

Editing weekly tariffs

Follow these steps to edit an existing weekly tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Weekly** tab, select the record you want to edit.
3. Click **Edit**.

   Result: You see the Edit Weekly Tariff screen relevant to the billing indicator.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Weekly Tariffs fields.

   Note: The **Rate Table** field is grayed out and cannot be changed.
5. Click **Save**.

Related topic

Weekly Tariffs

Deleting weekly tariffs

Follow these steps to delete an existing weekly tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Weekly** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the weekly tariff prompt.
5. Click **OK**.

Related topic

Weekly Tariffs

Holiday Tariffs

You use the **Holiday** tab to configure holiday tariffs for the service provider and to assign them to rate tables. The billing indicator set for the rate table determines whether the tariff is based on the call length or the data volume. For more information about rate tables, see Rate Tables.

You can configure a holiday tariff for a single day or for a range of days, and you can configure tariffs for multiple time periods within a holiday.

Example 1: A holiday tariff could be configured so that all calls on Christmas Day have a 50% discount.

Example 2: A holiday tariff could be configured for a three day period that applies a 50% discount at night and a 25% discount during the day.

Note: Holiday tariffs override weekly tariffs and the basic tariffs that are set for the rate table in the **CLI-DN** tab.

Topics:

Holiday Tariffs fields

Adding Holiday Tariffs

Editing holiday tariffs

Adding Multiple Time Periods to an Existing Holiday Tariff

Deleting holiday tariffs

Holiday Tariffs fields

This table describes the fields in the **New Holiday Tariff** and **Edit Holiday Tariff** dialogs.

Field	Description
Rate Table	The rate table that this tariff is assigned to. All the rate tables that are available to the service provider (ACS customer) appear in the **Rate Table** list. **Note:** After saving a holiday tariff, you can no longer change the rate table assigned to it.
Discount Set	The discount set assigned to this holiday tariff. All the discount sets that are available to the service provider appear in the **Discount Set** list.
Holiday	The holiday set that this tariff applies to. This list displays all the holiday sets that a service provider can use. For information about creating holiday sets or granting permission to a service provider to use a holiday set, see *ACS User's Guide*.
Every Day	(Optional) Select to specify daily tariffs. **Note:** This is the default and must be selected when the holiday period defined in the selected holiday set is for a single day. If you deselect **Daily Tariff**, you must specify the start and end month, and start and end day, for the holiday tariff.
Start Month	(Optional) Specifies the first month in which this holiday tariff applies.
Start Day	(Optional) Specifies the day in the month to start applying this holiday tariff.
Start Time (GMT)	Sets the time of day, in the GMT time zone, when this holiday tariff becomes active.
End Month	(Optional) Specifies the last month in which this holiday tariff applies.
End Day	(Optional) Specifies the day in the month to stop applying this holiday tariff.
End Time (GMT)	Sets the time of day, in the GMT time zone, when this holiday tariff stops being active.
Discount Period	Sets the discount period for the selected time period, in the local time zone, that you want to assign to this holiday tariff. The discount period determines the percentage discount to apply. See Discount Periods for more information.

Field	Description
Maximum Charge	(Optional) Sets the maximum charge, in units of the global currency, that you want to apply to any call using this tariff. **Note:** The symbol for the global currency is displayed next to the **Maximum Charge** field name. Specify a currency value of up to nine digits by using the following format: *Main_unitsSeparatorSub_units* where: • *Main_units* is the currency main units value. You can specify a value that is up to seven digits long • *Separator* is the separator defined for the global currency • *Sub_untis* is the currency sub-units value. You can specify a value that is up to two digits long **Note:** A value of zero (0) or a blank field means that there is no maximum charge.
Minimum Length (secs) or Minimum Volume (data unit)	Sets the minimum length of time (in seconds) or volume of data (in data units) to charge for calls that use this tariff. If the caller uses less time or data, they are still charged this amount. **Note:** The charge type depends on the billing indicator set for the selected rate table.
Billing Resolution (secs/data unit)	Sets the unit length to use for billing calls using this holiday tariff. For units of: • Time, the unit length is defined in seconds *SS* and hundredths of seconds *HH* by using the format: *SS.HH* • Data, the unit length is an integer value. **Examples:** • Telco A, charging by the minute (rounding up to the next full minute) would have this configured as 60.00 • Telco B, charging by the second (rounding up to the next full second) would have this configured as 1.00 • Telco C charging for each 1000 data units would have this configured as 1000
Low Credit Config	The notification templates to use when a credit value reaches a threshold value for sending low credit warnings. To create or maintain these templates, see Low Credit Notification Config.
Cascade	The balance type cascade to assign to this holiday tariff. **Note:** The **Cascade** list displays all the balance type cascades available to a service provider. For information about configuring balance type cascades, see Balance Type Cascades.

Field	Description
Tariff Code	(Optional) The tariff code to use for 16 KHz charging. You define the available tariff codes on the **Tariff Codes** tab in the ACS Resources screen.
Selected holiday period	Displays the holiday period start and end dates, time period start and end times, and a list of the discount periods that have been defined within those dates and times.

Adding Holiday Tariffs

Follow these steps to add a new holiday tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Holiday** tab, click **New**.

   The New Holiday Tariff Dialog opens. For information about the holiday tariff fields, see Holiday Tariffs fields.
3. Select the rate table, discount set, and holiday set for this tariff.
4. Do one of the following:
   - To configure a daily tariff for the holiday, select **Every Day**. The **Every Day** option is automatically selected for holidays that are for only one day, and cannot be changed.
   - To configure a tariff for a specific date range, deselect **Every Day** and select the date range for the holiday tariff from the lists in the **Start Month**, **Start Day**, **End Month** and **End Day** fields.
5. Select the time period during which this tariff will apply from the lists in the **Start Time (GMT)** and **End Time (GMT)** fields.
6. Complete the tariff configuration by performing the following steps:
   a. Select the holiday discount to apply from the **Discount Periods** list.
   b. If required, enter values for the maximum charge, minimum length, and billing resolution for this tariff.
   c. Select the low credit warning notifications to send from the **Low Credit Config** list.
   d. Select the balance type cascade to use from the **Cascade** list.
   e. If you want to send SCI or FCI charging information, select the tariff code to use from the **Tariff Code** list.
7. (Optional) If you want to configure additional time periods for this holiday tariff, perform the following steps for each additional period:
   a. Click **Apply**.
   b. Repeat steps 5 and 6.

   The configured periods display in the **Defined periods** list.

   Important: You must ensure that periods do not overlap when configuring multiple discount periods for a holiday tariff.
8. Click **Save**.

Related topic

Holiday Tariffs

Editing holiday tariffs

Follow these steps to edit an existing holiday tariff.

Note: To configure additional time periods for an existing holiday tariff, see Adding Multiple Time Periods to an Existing Holiday Tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Holiday** tab, select the record you want to edit.
3. Click **Edit**.

   The **Edit Holiday Tariff** dialog displays.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Holiday Tariffs fields.

   Note: The **Rate Table** field is grayed out and cannot be changed.
5. Click **Save**.

Related topic

Holiday Tariffs

Adding Multiple Time Periods to an Existing Holiday Tariff

Follow these steps to add one or more time periods to an existing holiday tariff.

1. On the **Holiday** tab, click **New**.

   The **New Holiday Tariff Dialog** opens. For information about the holiday tariff fields, see Holiday Tariffs fields.
2. Select the rate table, discount set, holiday set, and holiday dates for the existing holiday tariff.

   The holiday periods that are already defined for the holiday tariff display in the **Defined periods** list.
3. Select the time period that you want to add to this tariff from the lists in the **Start Time (GMT)** and **End Time (GMT)** fields. Ensure that the time period does not overlap an existing time period.
4. Complete the tariff configuration by performing the following steps:
   a. Select the holiday discount to apply from the **Discount Periods** list.
   b. If required, enter values for the maximum charge, minimum length, and billing resolution for this tariff.
   c. Select the low credit warning notifications to send from the **Low Credit Config** list.
   d. Select the balance type cascade to use from the **Cascade** list.
   e. If you want to send SCI or FCI charging information, select the tariff code to use from the **Tariff Code** list.

5. (Optional) For each additional time period that you want to configure, perform the following steps:
   a. Click **Apply**.
   b. Repeat steps 3 and 4.

   The configured periods display in the **Defined periods** list.

   Important: You must ensure that periods do not overlap when configuring multiple discount periods for a holiday tariff.
6. Click **Save**.

Related topic

Holiday Tariffs

Deleting holiday tariffs

Follow these steps to delete an existing holiday tariff.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Holiday** tab, select the record to delete.
3. Click **Delete**.

   You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   The record is deleted and you see the Holiday Tariffs prompt.
5. Click **OK**.

Related topic

Holiday Tariffs

Named Event

The **Named Event** tab allows you to set up and maintain activities, other than calls, that may incur a charge. The values you specify here are the base values for the events, and may be overridden by values specified in a Named Event Catalogue.

The event may be sending a short text message, a product type swap, a credit transfer, or a connection to recharge facilities. The named events can be changed by the Named Event feature node for that event in the control plan.

Event subscription

A named event catalogue event subscription is a named event that allows a subscriber to ‘subscribe’ to an unlimited use of a particular service without being charged during the subscribed period.

As such it will be possible to define a subscribable named event that is charged on first use and sets up a subscription to allow future uses in the subscription period to be charge free.

When this named event is used, an automatic subscription to the service is created which will then follow a normal life cycle.

If the subscription is already active, the user will not pay for the named event until the subscription expires.

Note: Event Subscription is not available if the UBE domain does not have ‘Charging Management’ configured or when there is no UBE domain configured.

Balance type cacades

Events can be configured to be billed across multiple balance types in a pro-rata fashion.

Example: If the Cash cost for an event is $10 and the Time cost is 120 seconds, and you only have a cash balance of $5, then the event would use your remaining $5, and then 60 seconds to pay for the rest of the event.

Named Event table

This table describes the content of each table column on the **Named Event** tab.

Field	Description
Named Event	The name of the named event.
Cash Cost ($)	The amount which will be charged if using a cash balance to pay for this event.
Time Cost (secs)	The time that will be charged if using time balance to pay for this event.
Data Cost (data units)	The data units that will be charged if using a data balance to pay for this event.
Unit Cost	The charge when balance types are not any of: • Cash • Time • Data
Free Event	Indicates that this event has a zero cost.
Expenditure Plan	Determines whether this CLI-DN contributes to expenditure calculations, and what expenditure plan it contributes to. This field is populated by the **Expenditure Plan** tab. For more information, see Expenditure Plan.
Tax Plan	The tax plan associated with this named event. **Tip:** Tax plans are configured on the **Tax Plan** tab on the Rating Management screen. For more information, see Tax Plan.
Contributes to PD	Whether or not this named event is included in the promotional destination calculations.

Field	Description
Single Balance	Whether or not the cost of the event should be taken from a single balance. **Notes:** • If this field is selected and there is no single balance that can cover the entire cost of an event, the event is declined with insufficient credit. • If this field is not selected , and providing the entire cost of the event can be satisfied with the selected cascade, the seconds, cash, data costs and generic units are taken pro-rata as necessary from each balance.

Adding named event sets

Follow these steps to add a new named event set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event** tab, click **New Set**.

   Result: The New Named Event Set screen appears.
3. In the **Name** field, type the name of the new named event set.
4. Click **Save**.

Related topic

Named Event

Editing named event sets

Follow these steps to edit an existing named event set.

1. On the **Named Event** tab, select the named event to edit from the **Event Set** drop down box.
2. Click **Edit Set**.
3. Modify the **Name** as required.
4. Click **Save**.

Related topic

Named Event

Deleting named event sets

Follow these steps to delete an existing named event set.

1. On the **Named Event** tab, select the named event set to delete from the **Event Set** drop down box.
2. Click **Delete Set**.

Result: You see the Delete Confirmation prompt.

3. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Named Events prompt.

4. Click **OK**.

Related topic

Named Event

Adding named events

Follow these steps to add a new named event to a named event set.

1. On the **Named Event** tab, select the required **Event Set** from the drop down box.
2. Click **New**.
3. Configure this record by entering data in the fields on this screen.
4. Click **Save**.

Related topic

Named Event

Editing named events

Follow these steps to edit an individual named event in a selected named event set.

1. On the **Named Event** tab, select the **Event Set** from the drop down box.
2. In the table on the tab, select the record to edit.
3. Click **Edit**.
4. Edit the details as required.
5. Click **Save**.

Related topic

Named Event

Deleting named events

Follow these steps to delete an existing named event.

Note: When you delete a named event, the named event is automatically removed from any named event catalogues to which it has been allocated.

1. On the **Named Event** tab, select the **Event Set** from the drop down box.
2. Select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK** to delete the record from the database.

   Result: You see record deleted confirmation message.

5. Click **OK**.

Related topic

Named Event

Discount Periods

A discount period is used to specify the discount percentage to be applied to each charge period, as created in Charge Periods.

Discount periods are used by the weekly and holiday tariffs.

Topics:

Adding discount period sets

Editing discount period sets

Deleting discount period sets

Adding discount periods

Editing discount periods

Deleting discount periods

Adding discount period sets

Follow these steps to add a new discount period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, click **New Set**.

   Result: You see the New Discount Period Set screen.
3. In the **Name** field, type the name of the new discount period set.
4. Click **Save**.

Related topic

Discount Periods

Editing discount period sets

Follow these steps to edit an existing discount period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, select the discount period set to edit from the **Discount Period** drop down box.
3. Click **Edit Set**.

   Result: You see the Edit Discount Period Set screen.
4. Modify the **Name** as required.
5. Click **Save**.

Related topic

Discount Periods

Deleting discount period sets

Follow these steps to delete an existing discount period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, select the discount period set to delete from the **Discount Period** drop down box.
3. Click **Delete Set**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Discount Periods prompt.
5. Click **OK**.

Related topic

Discount Periods

Adding discount periods

Follow these steps to add a new discount period to a discount period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, select the Discount Period Set from the **Discount Period** drop down box.
3. Click **New**.

   Result: You see the New Discount Period screen.

   The **Period** field will display the amount of time before the charge is initiated.

   Note: This will already have been populated and cannot be changed. The period will increase by 1 for each new record.
4. In the **Percentage Discount** field, enter the numeric percentage of the discount to be applied to the charge period.
5. Click **Save**.

Related topic

Discount Periods

Editing discount periods

Follow these steps to edit an individual discount period in an existing discount set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, select the **Discount Period** set to edit from the drop down box.

3. In the table, select the record to edit.
4. Click **Edit**.

   Result: You see the Edit Discount Period.
5. Type a new value for the **Percentage Discount** to be applied to the charge period.

   Note: The **Period** field cannot be edited after the discount period is first saved.
6. Click **Save**.

Related topic

Discount Periods

Deleting discount periods

Follow these steps to delete an existing discount period from a discount set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Discount Periods** tab, select the **Discount Period** set from the drop down box.
3. Select the record to delete in the table on the tab.
4. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Discount Periods prompt.
6. Click **OK**.

Related topic

Discount Periods

Charge Periods

A charge period controls the charge rates applied to specific periods of time within a call. For example, you may wish to charge a lower-than-standard rate to the first 60 minutes of a call and then charge the full rate to the duration. Charge periods are used by the CLI-DN tariffs.

You may have up to ten charge periods per set, and any number of charge period sets. You may also define one charge period loop per charge period set.

Note: Charge period sets may be rate table specific, or global. Global charge period sets will be available to all rate tables when creating CLI-DN mappings.

Topics:

Charge period loops

Adding charge period sets

Editing charge period sets

Deleting charge period sets

Charge period fields

Adding charge periods

Adding a loop period

Editing charge periods

Deleting charge periods

Defining a charge period loop

Charge period loops

Charge period loops repeat selected charge periods from the set, after the call has been through the normal charge period set. All the charge periods from the set can be included in the loop, however each charge period may only appear in it once.

To define a charge period loop, designate the last charge period in the set as a special 'Loop Period'. You can then:

- Select which charge periods to include in the loop
- Specify the order to apply them in

When you set up a charge period loop, the **Length In Loop** field for each of the included charge periods defines how long each charge period will last during loop processing. If you leave this field blank when defining a new charge period, then the length in loop defaults to the charge period length (that is, the difference between the charge period start time and the start time of the next charge period).

When you edit the start time for a charge period in a charge period loop, the **Length In Loop** field is not automatically updated to reflect the new start time. To change this value, you must edit it manually in the Edit Charge Period screen.

See Adding a loop period and Defining a charge period loop.

Adding charge period sets

Follow these steps to add a new charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, click **New Set**.

   Result: You see the New Charge Period Set screen.
3. In the **Name** field, type the name of the new charge period set.
4. If required, select the rate table to use for the charge period from the drop down list.

   Tip: The rate tables list is populated by the entries made on the **Rate Tables** tab.
5. If available, select the required **Billing Indicator**:
   - Time - for duration billing rates
   - Data - for volume billing rates

   Note: This can only be done if a rate table is not selected. If a rate table is selected then that rate tables billing indicator is applied and these options are unavailable.

6. Click **Save**.

   Note: Charge periods that do not have a rate table associated with them are global.

Related topic

Charge Periods

Editing charge period sets

Follow these steps to edit an existing charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set to edit from the list displayed in the table.
3. Click **Edit Set**.

   Result: You see the Edit Charge Period Set screen.
4. Modify the **Name** as required.
5. If available, select the required **Billing Indicator**:
   - Time - for duration billing rates
   - Data - for volume billing rates

   Note: This can only be done if a rate table is not selected. If a rate table is selected then that rate tables billing indicator is applied and these options are unavailable.
6. Click **Save**.

Related topic

Charge Periods

Deleting charge period sets

Follow these steps to delete an existing charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set to delete from the list displayed in the table.
3. Click **Delete Set**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the charge period prompt.

   Tip: The charge period set may only be deleted if there are no CLI-DN tariffs that use this set.
5. Click **OK**.

Related topic

Charge Periods

Charge period fields

This table describes the function of each field.

Field	Description
Period Start (secs) Volume Start (data units)	The start time or volume for the charge period. If the charge period set has a loop, then the start time or volume must be before the start time or volume for the loop period. This field cannot be edited after the first time it is saved. **Allowed values:** Positive integers. **Tip:** There must be one charge period with a period start (secs) or volume start (data units) value of 0 to enable short calls to be charged.
Charge (*CurrencyMinor*/min or data unit)	The amount which will be charged for this charge period. **Allowed values:** Positive integers. You can only edit this field if the **Loop Period** check box is not selected. **Note:** The record with the highest start period will effectively have no upper limit on its period. **Tip:** As this field only defines the cash rate per min or data unit, the time and data rates is always one to one.
Loop Period	Defines whether or not this charge period loops. **Note:** If you select this check box, the values in the **Charge (*CurrencyMinor*/min)** and **Length in Loop (secs)** fields will be cleared. For more information about charge period loops, see Charge period loops.
Length in Loop (secs) Loop Size (data units)	The length of time/volume the charge period will last during loop processing. Only enter a value here if you want the charge period to have a different time/volume length when it is in the loop. **Allowed values:** Positive integers You can only edit this field if the **Loop Period** check box is not selected. **Note:** This field defaults to the charge period length if left blank (that is, the difference between charge period start time/volume and the start time/volume for the next charge period). However, once the charge period has been created, the length in loop value will be unaffected by any changes to the charge period start time/volume. It will maintain its original value. To change the length in loop value, you must edit it in the Edit Charge Period screen.

Adding charge periods

Follow these steps to add a new charge period to a charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set to add a new charge period to from the list displayed in the table.
3. Click **New**.

   Result: You see the New Charge Period screen for the relevant billing indicator.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Charge period fields.

   Note: Ensure **Loop Period** is not selected.
5. Click **Save**.

Related topic

Charge Periods

Adding a loop period

Follow these steps to add a loop period to a charge period.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set to add a loop period to from the list displayed in the table.
3. Click **New**.

   Result: You see the New Charge Period screen for the billing indicator of the charge period set.
4. For time charging:
   - In the **Period Start (secs)** field, enter the start time for the loop period
   - This must be after the start time for all other periods in the set

   For data charging:
   - The **Volume Start (data units)** field defaults to zero
5. Select the **Loop Period** check box.
6. Click **Save**.

Editing charge periods

Follow these steps to edit an individual charge period within an existing charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set that contains the charge period to edit from the list displayed in the table.

3. In the table at the bottom of the **Charge Periods** tab, select the record to edit.
4. Click **Edit**.

   Result: You see the Edit Charge Period screen relevant to the billing indicator.
5. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Charge period fields.

   Notes:

   - The **Period/Volume Start** field cannot be edited in the first charge period created.
   - The **Length In Loop** value will be unaffected by any changes to the charge period start time. For more information, see Charge period loops.
6. Click **Save**.

Related topic

Charge Periods

Deleting charge periods

Follow these steps to delete an existing charge period from a charge set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set that contains the charge period to edit from the list displayed in the table.
3. In the table at the bottom of the **Charge Periods** tab, select the record to delete from the table.
4. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Charge Periods prompt.
6. Click **OK**.

Related topic

Charge Periods

Defining a charge period loop

Follow these steps to define a charge period loop for a charge period set.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Charge Periods** tab, select the charge period set.
3. Define a loop period for the charge period set as described in Adding a loop period.
4. Click **Define Loop**.

   Result: You see the Charge Period Loop screen.

5. In the **Selected Periods** list, specify the charge periods to be in the loop. To:
   - Add a period to the list, select it in the **Available Periods** list and click **Add**.
   - Remove a period from the list, select it in the **Selected Periods** list and click **Remove**.
6. Use the **Up** and **Down** buttons to set the order in which the selected charge periods will be processed in the loop.
7. Click **Save**.

Related topic

Charge Periods

Balance Type Cascades

The **Balance Type Cascade** tab lets you specify which balance types are to be used, and in what order, to pay for a call. Please see the following examples:

- Standard
  - Promotional Balance
  - General Cash Balance
- Promotional Named Event
  - Free SMS
  - Promotional Balance
  - General Cash Balance

Tip: In order to use cascade plans, ensure that `ccsNamedEventHandler` has been correctly configured. For more information, see *CCS Technical Guide*.

Topics:

Balance Type Cascade fields

Adding balance type cascades

Editing balance type cascades

Deleting balance type cascades

Balance Type Cascade fields

This table describes the function of each field.

Field	Description
Name	The unique name of the balance type cascade.
Available Balance Types	The balance types which could be part of the balance type cascade, but are not.
Selected Balance Types	The balance types which are charged when this balance type cascade is used. **Note:** The balance types are used in the same order they appear in the list, starting with the top and working down.

Adding balance type cascades

Follow these steps to add a new balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Balance Type Cascades** tab, click **New**.

   Result: You see the New Balance Cascade screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Balance Type Cascade fields.
4. Click **Save**.

Related topic

Balance Type Cascades

Editing balance type cascades

Follow these steps to edit an existing balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the grid on the **Balance Type Cascades** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Balance Cascade screen.
4. Edit the fields to reflect the required changes.

   For more information about the fields on this screen, see Balance Type Cascade fields.
5. Click **Save**.

Related topic

Balance Type Cascades

Deleting balance type cascades

Follow these steps to delete an existing balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Balance Type Cascades** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

   Result: The record is deleted from the database.

Related topic

Balance Type Cascades

Expenditure Plan

The **Expenditure Plan** tab allows you you configure which balance types to include in expenditure plans. You use expenditure plans to determine the contributions to make to expenditure through named events and CLI-DN tariffs.

Only balance types that have been set up to hold expenditure contributions are available for inclusion in expenditure plans. The exact value of the expenditure will be charged to the included balance types.

Note: For named events, the charge is applied to the included balance types as follows:

- For cash only named events, it is only applied to cash expenditure balance types
- For time only named events, it is only applied to time expenditure balance types
- For cash and time named events, it is applied to all expenditure balance types included in the plan

For more information about setting up:

- CLI-DN tariffs which contribute to expenditure plans, see Configuring CLI-DN Tariffs
- Named events which contribute to expenditure plans, see Named Event

Topics:

Expenditure Plan fields

Adding expenditure plans

Editing expenditure plans

Deleting expenditure plans

Expenditure Plan fields

This table describes the function of each field.

Field	Description
Name	The unique name of the expenditure plan.
Available Balance Types	The balance types which could be part of the expenditure plan, but are not.
Selected Balance Types	The balance types which expenditure attributed to this expenditure plan is added to.

Adding expenditure plans

Follow these steps to add a new expenditure plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Expenditure Plan** tab, click **New**.

   Result: You see the New Expenditure Plan screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Expenditure Plan fields.

4. Click **Save**.

Related topic

Expenditure Plan

Editing expenditure plans

Follow these steps to edit an existing expenditure plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Expenditure Plan** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Expenditure Plan screen.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Expenditure Plan fields.

5. Click **Save**.

Related topic

Expenditure Plan

Deleting expenditure plans

Follow these steps to delete an existing expenditure plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Expenditure Plan** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK** to delete the record from the database.

   Result: You see the expenditure plans record successfully deleted prompt.

5. Click **OK**.

Related topic

Expenditure Plan

Cross Balance Type Cascades

The **Cross Balance Type Cascade** tab lets you specify which cross balance types are to be used for calculating cross balance type discounts. It also lets you specify the order in which they are used.

The discounts are applied to cash balance types being debited during voice calls. During a call the chargeable balance types that will be used to pay for the call are listed in a balance type cascade.

Notes:

- Only cash balance types are discounted. Time or other non-cash balance types cannot be discounted.
- Cross balance type discounts are compounded with any applicable weekly or holiday discounts.

For more information about cross balance types, see Cross balance types.

Topics:

Rules applying to cross balance type cascades

Cross Balance Type fields

Adding cross balance type cascades

Editing cross balance type cascades

Deleting a cross balance type cascade

Rules applying to cross balance type cascades

During a call, the balance types in the cross balance type cascade are debited according to the following rules:

1. If the first cross balance type to be debited is neither cash nor time, it will be debited by one. There will be no further processing of the cross balance type cascade and no further discounting will be applied.
2. If a cash or a time cross balance type currently being debited becomes exhausted and the next cross balance type in the cascade is neither cash nor time, then this next cross balance type will not be debited. There will be no further processing of the cross balance type cascade and no further discounting will be applied.
3. If a cash or a time cross balance type currently being debited becomes exhausted and it is the last cross balance type in the cascade or all the remaining cross balance types are also exhausted, then there will be no further processing of the cross balance type cascade. No further discounting will be applied.

Cross Balance Type fields

This table describes the function of each field.

Field	Description
Name	The unique name of the cross balance type.
Available Balance Types	The balance types which could be part of the cross balance type, but are not.

Field	Description
Selected Balance Types	The balance types which are used for cross balance type discounts during voice calls which use this cross balance type. **Note:** The balance types are used in the same order they appear in the list, starting with the top and working down.

Adding cross balance type cascades

Follow these steps to add a new cross balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Cross Balance Type Cascades** tab, click **New**.

   Result: You see the New Cross Balance Cascade screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Cross Balance Type fields.
4. Click **Save**.

Related topic

Cross Balance Type Cascades

Editing cross balance type cascades

Follow these steps to edit an existing cross balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Cross Balance Type Cascades** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Cross Balance Cascade screen.
4. Edit the fields to reflect the required changes.

   For more information about the fields in this screen, see Cross Balance Type fields.
5. Click **Save**.

Related topic

Cross Balance Type Cascades

Deleting a cross balance type cascade

Follow these steps to delete a cross balance type cascade.

1. In the Rating Management window, select the service provider from the **Service Provider** list.

2. In the table on the **Cross Balance Type Cascades** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

   Result: The record is deleted from the database

Related topic

Cross Balance Type Cascades

Reservation Config

The **Reservation Config** tab allows you to configure reservation settings. In the case of, for example, network failure, this allows the debit of known usage from the subscriber's account.

The reservation configurations are used in conjunction with CLI-DN Tariffs. See Configuring CLI-DN Tariffs.

You can enable **Adaptive Reservations** and set**Adaptive Data Parameters** for reservation configurations using this tab. Adaptive Data ensures that when charging data with a DCA, ACS, or CCS:

- The data amount reserved on the VWS equals the amount which the subscriber would consume during the validity time at the current rate of consumption. The reservation size is still subject to upper and lower reservation size limits and the subscriber's available funds.
- The validity time in a Diameter Credit-Control-Answer (CCA) for an idle data session is longer than the validity time for an active data session.
- The validity time with the lowest value is used when a subscriber uses more than a single service concurrently.

Adaptive Reservations updates reservation amounts by comparing a subscriber's usage rate to the reservation configuration and the subscriber's available resources. The following example shows how reservation amounts are determined during a session with variable data usage rates.

Note: Access to the **Reservation Config** tab is controlled by user permissions. This tab is only visible to users with the relevant permission. See "Creating User Templates" in *SMS User's Guide*.

Example

This example shows Adaptive Reservations for a subscriber with varying usage rates during a single data session. The subscriber has sufficient resources for the entire session. Not all configuration fields are shown in this example.

The following table shows the reservation configuration for this example.

Field	Configured Value
Hold Reservation Open (secs)	630 seconds
Requested Reservation Chunk (units)	100 Units (500Kb)
Commit Volume Threshold	100 Units (500Kb)

Field	Configured Value
Request Time Threshold	300 seconds
Adaptive Data	Check box
Idle Validity Time	300 seconds
Active Validity Time	30 seconds
Minimum Requested Reservation Chunk (units)	1 Unit (5Kb)

Each row in the following table shows the subscriber's usage during the session and the resulting Adaptive Reservations behavior.

Subscriber Usage	Adaptive Reservations Behavior
The subscriber initiates a new data session	The CCS provides a reservation equaling 1 Unit with a validity time of 300 seconds based on the **Minimum Requested Reservation Chunk**.

The subscriber consumes no data in 5 minutes (300 seconds)	The configured **Idle Validity Time** is exceeded, triggering usage reporting. Adaptive Reservations determines that the session is idle based on the following calculation:
	
	`Rate = Units Consumed / Time to Consume`
	
	`Units`
	
	The usage rate calculated for the example is:
	
	`0 units/sec = 0 units / 300 sec`
	
	Non-usage results in the extension of the existing reservation of 5Kb for 300 seconds. The session is not terminated because the **Hold Reservation Open** value is configured to 630 seconds.

Subscriber Usage	Adaptive Reservations Behavior

The subscriber consumes 1 data unit (5Kb) in 10 seconds.	Adaptive Reservations determines that the session is active based on the following usage rate calculation:
	
	`0.1 units/sec = 1 unit / 10 sec`
	
	The CCS increases the subscriber's reservation based on the new rate using the following calculation for additional units:
	
	`Additional Units = Rate X Active Validity Time`
	
	The existing reservation of 1 unit is augmented with 3 additional units:
	
	`3 units = 0.1 units/sec X 30 seconds`
	
	The reservation is now 4 units.

The subscriber consumes 3 data units (15Kb) in 1 second before the reservation expires.	The CCS increases the subscriber's reservation by the number of units calculated using the new rate of:
	
	`3 units/sec = 3 units / 1 sec`
	
	The existing reservation of 4 units is augmented with 90 additional units:
	
	`90 units = 3 units/sec X 30 sec`
	
	The reservation is now 94 units.

The subscriber consumes 90 data units (450Kb) in 15 seconds before the reservation expires.	The CCS calculates a new rate of 6 units/sec and increases the reservation by the maximum allowed chunk of 100 units. A reservation size of 180 units (6 X 30) is not allowed because of the **Requested Reservation Chunk** value is set to 100 units. The reservation is now 194 units.

Subscriber Usage	Adaptive Reservations Behavior
The subscriber consumes 60 data units (300Kb) in 30 seconds before the reservation expires.	The CCS performs a mid-session commit of the subscriber's usage because the usage exceeds the **Commit Volume Threshold** of 100 units**.** The committed usage at this point totals 154 units (770Kb). The CCS calculates a new rate of 2 units/sec and reserves 60 additional units. The reservation now totals 214 units (154 committed units and 60 reserved but not committed units).
The subscriber consumes 3 data units (15Kb) in 30 seconds before the reservation expires.	The CCS attempts to reserve 3 additional units based on the new data consumption rate. The existing unused reservation of 60 units exceeds the new required amount. In this case, the CCS performs another mid-session commit of the 3 data units used by the subscriber. The committed usage at this point totals 157 units (785Kb). The reservation adapts to a new value of 3 units with a 30 sec validity time.
The subscriber consumes 2 data units (10Kb) in 15 seconds then terminates the session.	The CCS commits the 2 used units based on the session termination. The total committed usage for the session is 159 units (795Kb). No outstanding reservations against the subscriber's resource balance for this session exist.

TTC based Rating and Charging

You can disable continuous time rating by de-selecting **Continuous-Time Rating** check box in Reservation Config screen. Once continuous time rating is disabled, rating based on Tariff Time Change (TTC) is activated. This will ensure that any change that would affect the charging that takes place during an ongoing session is considered when consumed units are charged.

- TTC based charging ensures that a time of change in tariff (TTC) is sent out via DCA in CCA (credit-control-answer) messages as applicable.
- When a TTC is sent in CCA messages, it expects before TTC and after TTC usage in CCR-U/CCR-T messages.
- For handling TTC based rating and charging properly, appropriate eserv.config configurations should be present in DIAMETER section. For more information, see *Diameter Control Agent Technical Guide*.

When Continuous-Time Rating is disabled, TTC will be sent out or not is based on the following criteria:

- Favorable: If the rate is going to decrease during an ongoing session, TTC will be sent as the epoch time when the rate change will occur.
- Adverse: If the rate is going to increase during an ongoing session, TTC will not be sent.
- Neutral: If there is no rate change during an ongoing session, TTC will not be sent.

For detecting a change in the rate, following are treated as TTC boundaries:

- Charge Period Change
- Discount (Weekly / Holiday)
- Balance Type Cascade Change
- Balance Bucket Expiry

Note: TTC boundaries are not applicable for cross balance cascade change. Normal slab based rating is performed in case of cross balance cascade change.

About Mid-Session EDR Configuration

You can use the following options to control how partial EDRs are generated:

- You can configure to generate partial EDRs by volume.
- You can configure a time interval to generate partial EDRs. For example, you can create a partial EDR every hour. A partial EDR is created even if no volume has been consumed.
- You can configure to generate a partial EDR at a specified time of day based on a configured time zone. For example, an EDR could be generated at midnight. A partial EDR is created even if no volume has been consumed.

Note: This option can result in an increased load on system resources at the designated time.

These configuration options can be used in combination; for example:

- You can create partial EDRs at 100-MB intervals and once a day for the same session.
- You can create partial EDRs based on a time interval and a specified time of day. If both time-based intervals occur at the same time, only one partial EDR is created.

About Billing Rounding Configuration

You can apply different rating rounding methods to Cash Chargeable Balances and Cash Cross Balances.

The rounding methods that you can apply are:

- Bankers
- Ceiling
- Commercial

By default, Bankers rounding is applied. For detailed information about rating rounding, see Rounding During Rating Calculations.

Reservation Config fields

This table describes the function of the reservation configuration fields.

Field	Description
Configuration Name	The name of the configuration.

Field	Description
Hold Reservation Open (secs)	This value defines the minimum period of time in seconds that can elapse before a reservation will be timed out by the billing engine. If set, this value overrides both the Reservation Period Override (RPO) field in an Initial Reservation, and the Reservation Length Tolerance specified in VWS configuration for the CCS beVWARS Reservation Handler. Hold Reservation Open is a total figure and not a delta based on the maxReservationLength configured in the **eserv.config** file on the VWS. This means that if your reservation size is 200 seconds, you need to configure the Hold Reservation Open for a period greater than 200 seconds, otherwise you are going to trigger a timeout during the period of the reservation. **Note:** If you enable Adaptive Data, this value must be greater than the combined time set in the **Request Time Threshold** and **Idle Validity Time**.
Requested Reservation Chunk (units)	Requested Reservation Chunk defines the amount that the VWS shall attempt to return upon receipt of a reservation request, assuming that the subscriber has sufficient funds: • Upon receipt of an Initial Reservation, the VWS will attempt to reserve the specified number of units. • Upon receipt of a Subsequent Reservation Request (SRR), the VWS will examine the number of units consumed so far (specified in the SRR), and then return enough units to bring the total un-used reservation up to the Requested Reservation Chunk (RRC) value. So, the formula used is as follows: Returned Reservation = RRC – (Un-Used Reservation MOD RRC) **Note:** The RRC value is subject to precision value, depending on the switch used, specified in IR REQ. For example, if the UATB node is configured for a: • CS2 (CAMEL) switch, it sends an IR REQ with "[PREC] = 'TEN'", which results in beVWARS returning a reservation with the value = 10 x <RRC value>. • Nokia switch, it uses the configured RRC value.
Commit Volume Threshold	Any non-committed time, that has been confirmed as being used, will be committed once the total goes above this threshold. **Note:** This field is active when the **Enabled** check box has been selected.

Field	Description
Request Time Threshold	UATB can decide not to request more funds if there is enough of the reservation remaining. If however, the Request Time Threshold is reached, then an SR will be sent regardless. Its purpose is to stop the reservation expiring on the VWS. **Note:** This field is active when the **Enabled** check box has been selected.
Go Greedy Reservation Length Limit (units)	If less than this number of units would be returned for the reservation, return the total number of units available instead. **Note:** Selecting the **Use Global** check box defaults the limit to the **greedyReservationLengthLimit** value configured in the **eserv.config** file.
Continuous-Time Rating	Whether to use continuous time rating or Tariff-Time-Change (TTC) based rating. By default this check box is selected. Un-check this check box to enable TTC based rating.
Adaptive Data	Whether to use the Adaptive Data parameters configured in the following fields for Adaptive Reservations. **Note**: If you enable Adaptive Reservations, you must also provide a value greater than zero for the **Commit Volume Threshold** and select the **Enabled** check box for this field. Enabling a commit volume threshold allows reservation to be committed in the middle of active sessions when the threshold is reached. This behavior is required when using Adaptive Reservations.
Dynamic Quota	Whether to use Dynamic Quota.
Idle Validity Time	The validity time (in seconds) to send to DCA if the connection is idle. The connection is idle if one of the following is true: No data has been used yet. • The data used last period is less than the Minimum Requested Reservation Chunk. • The length of the last session is less than the Idle Validity Time. A value of **0** means do not send validityTime in the Diameter CCA message. When configured this way, the Gateway GPRS Support Node (GGSN) chooses the validity time.
Active Validity Time	The validity time (in seconds) to send the DCA if the connection is active. See **Idle Validity Time** for how an idle session is defined. A value of **0** means do not send validityTime in the Diameter CCA message. When configured this way, the GGSN chooses the validity time.

Field	Description
Minimum Requested Reservation Chunk (units)	The minimum reservation size in units. If a value of **0** is used, the adaptive data parameters are turned off.
Mid-Session EDRs	Enables the feature.
Commit Time Threshold	This defines the amount of time at which point a partial EDR is produced (Duration of time since the last commit is greater than the Commit Time Threshold).
Commit Time	This defines a specific time to create a partial EDR, according to the configured time zone.
Timezone	The time zone to use for the commit time.
Billing Rounding	Selecting the **Default** check box disables the fields in the Rounding Parameters group and uses the default rounding method, which is Bankers rounding.
System Currency Base	This field displays the configured system currency base (which is chosen at installation time). The value signifies the order of magnitude of the "subunits" used in rating calculations, and determines the number of rounding decimal places available in the **Decimal Places** field.
Rounding Method	The rounding method to use for rating. The available rounding methods are: • **Bankers**: Rounds to the nearest subunit. Values x.5 are rounded to the nearest even small. • **Ceiling**: Rounds upwards. Rounding granularity is determined by a rounding factor, RF, derived from the number of decimal places. • **Commercial**: Rounds to the nearest subunits. Values x.5 are rounded towards infinity. For example, x.5 is rounded to x+1 and -x.5 is rounded to -x-1.
Decimal Places	The number of decimal places to use for rounding. The available decimal places in this field is determined by the system currency base. **Note**: This field is enabled only when **Ceiling** is selected as the rounding method to use.

Adding a reservation config

Follow these steps to add a reservation config.

1. On the **Reservation Config** tab, click **New**.

   Result: The New Reservation Config screen appears.

2. Fill in the fields, as described in Reservation Config fields.
3. Click **Save**.

Related topic

Reservation Config

Editing a reservation config

Follow these steps to edit a reservation config.

1. In the table on the **Reservation Config** tab, select the record to edit.
2. Click **Edit** or Double-click on the record.

   Result: The Edit Reservation Config screen appears.
3. Edit the details as described in Reservation Config fields.
4. Click **Save**.

Related topic

Reservation Config

Deleting a reservation config

Follow these steps to delete an existing Reservation config.

1. In the table in the **Reservation Config** tab, select the record to delete.
2. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
3. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Reservation Config success message.
4. Click **OK**.

Related topic

Reservation Config

Low Credit Notification Config

The **Low Credit Notification Config** tab allows for notifications to be sent based on credit values.

These notifications are messages; to configure a 'beep" notification, see *CCS Feature Nodes - UATB node configuration*.

The low credit threshold configured in these screens control **when** the beep would be played, the macro node controls **if** it should be played.

Low Credit Notification Config fields

This table describes the function of each field.

Field	Description
Name	The unique low credit notification config name.

Field	Description
Low Balance Threshold	The threshold value that will trigger the notification. Setting this to less than 30 seconds can result in the in-band low credit tone not being generated. Some network equipment, or signaling implementations, use a fixed warning period of 30 seconds and anything less than that turns the tone off.
DAP Operation	The name of the DAP operation to use for this notification. This list is configured in the DAP application SMS screen at **SMS > Services > DAP > Resources** then **Operations** tab. For more information about DAP see *Data Access Pack User's and Technical Guide*.
Suppress DAP	Suppress DAP or not indicator location. This is a boolean profile tag for this customer, which if set to True will suppress the DAP notification. Profile tags are configured in **SMS > ACS Service > Configuration > Profile Tag Details** tab.
Notification Template	The notification template to use for this notification. This list is configured in **SMS > ACS Service > Configuration > Notifications** tab.

Adding a Low Credit Notification Config

Follow these steps to add a low credit notification item.

1. In the Rating Management screen, select the **Service Provider** from the drop down box.
2. Select the **Low Credit Notification Config** tab and click **New**.

   Result: You see the New Low Credit Notification Config screen.
3. Configure this record by entering data in the fields or selecting from the drop down lists on this screen.

   For more information about the fields on this screen, see Low Credit Notification Config fields.

   Note: The **Suppress DAP** list becomes available when a DAP operation is selected.
4. Click **Save**.

Related topic

Low Credit Notification Config

Editing a Low Credit Notification Config

Follow these steps to edit a low credit notification item.

1. In the Rating Management screen, select the **Service Provider** from the drop down box.
2. Select the **Low Credit Notification Config** tab.
3. Select a config record and click **Edit** or double-click on a config record.

Result: You see the Edit Low Credit Notification Config screen.

4. Edit the details as described in Low Credit Notification Config fields.

   Note: The **Suppress DAP** list becomes available when a DAP operation is selected.

5. Click **Save**.

Related topic

Low Credit Notification Config

Deleting a Low Credit Notification Config

Follow these steps to delete an existing Low Credit Notification Config.

1. In the table in the **Low Credit Notification Config** tab, select the record to delete.
2. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Low Credit Notification Config success message.

4. Click **OK**.

Related topic

Low Credit Notification Config

Tax Plan

The **Tax Plan** tab lets you set up and maintain tax plans. Tax plans are used in calculating the tax component of charges and recharges in Prepaid Charging.

Online charging transactions use tax plans to:

- Acquire the tax amount to be applied to the charging activity
- Calculate tax as inclusive to the charging definitions
- Calculate tax as additional to the charging definitions.

A tax plan is a name that can be referenced in rating, much like rate tables. Definitions of how to calculate the tax for charges/credits with the tax plan will use the definitions associated with this plan.

Applying tax

Currently, tax can be applied at three points during the charging transaction:

- Session rating
- Named event rating
- Redemption - voucher or promotional

Tax information is reported in the corresponding EDR and a tax report is made available indicating the tax liability for the platform.

Session rating

Session rating (such as voice calls) use the CLI-DN rating tables. A single tax plan can be optionally associated with each CLI-DN mapping. This tax plan applies to all the tariffs of a multi-tariff CLI-DN. For mid-tariff moment changes, the tax plan associated with each of the CLI-DN mappings applies only to that part of the cost.

Example:

If after 10 minutes of a 15 minute call, the tariff plan changes from T1 to T2, the tax plan for T1 will only apply to the cash costs for the first 10 minutes, while the tax plan associated with T2 will apply for the last five minutes.

Note: Tax is calculated only for cash balance types of CLI-DN mappings.

Named event

Named event rating for SMSes or one-off charges use the named event rating tables. A single tax plan can be optionally associated with each named event base definition.

This tax plan applies only to the cash cost of a named event.

Computation methods

Each tax plan can to be configured to calculate the associated tax definitions using one of the following methods:

- Compound
- Cumulative

Compound tax

In the compound method, multiple tax definitions are calculated by applying the tax percentage to each subtotal obtained during the computation.

Tax amount is initially calculated on the initial cost and subtotaled. The second tax is then applied to this subtotal and the process is repeated for each additional tax definition in the tax plan. This addition to the original amount means the tax is itself taxed in the compound method.

Example:

Tax plan (T1) has the two tax definitions linked to it:

TD1_1: 20%

TD1_2: 10%

Now if a $100 charge were to be taxed using the *compound* method the following calculation would occur:

$100 * 20/100 = $20

Sub Total: $120

$120 * 10/100 = $12

Total: $132

Cumulative tax

Cumulative tax is calculated on the base charge and all the tax amounts are added together at the end. This makes no difference for a tax plan with a single tax definition in it.

Example:

Tax plan (T1) has the two tax definitions linked to it:

TD1_1: 20%

TD1_2: 10%

Now if a $100 charge were to be taxed using the *cumulative* method the following calculation would occur:

$100 * 20/100 = $20

$100 * 10/100 = $10

Total: $100 + $20 + $10 = $130

Tax Plan fields

This table describes the function of each field.

Field	Description
Name	The name of the tax plan. **Notes:** • Tax plan names must be unique within a customer's set of tax plans. • Special characters and case do not make a distinction between names. • This is a mandatory field.
Inclusive	Selecting this check box indicates the tax plan is of type inclusive, that is, the tax is already included in the cost.
Combine Method	Indicates how multiple tax definitions are calculated for a single tax plan. Select one of: • **Compound:** each definition is calculated on the subsequent total. • **Cumulative:** each definition is calculated on the base charge and tax amounts added. See Compound tax and Cumulative tax for more information.
EDR Tag	Name used to identify this tax plan in an EDR.

Adding tax plans

Follow these steps to add a new tax plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.

2. On the **Tax Plan** tab, click **New**.

   Result: You see the New Tax Plan screen.

3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tax Plan fields.

   To add tax definitions to the plan, see Adding tax definitions.

4. Click **Save**.

Related topic

Tax Plan

Editing tax plans

Follow these steps to edit an existing Tax Plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Tax Plan** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Tax Plan screen.

4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tax Plan fields.

   To add tax definitions to the plan, see Editing tax definitions.

5. Click **Save**.

Related topic

Tax Plan

Deleting tax plans

Follow these steps to remove a tax plan.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Tax Plan** tab, select the record to delete and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK** to delete the record from the database.

Related topic

Tax Plan

Adding tax definitions

Follow these steps to add a new tax definition.

1. On the New or the Edit Tax Plan screen, click **New**.

   Result: You see the New Tax Definition screen.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tax plan definition fields.

3. Click **Save**.

   Result: You will be returned to the Tax Plan screen and the new record will be displayed in the **Tax Definitions** table.

Related topic

Tax Plan

Tax definitions

Tax definitions define the actual percentage of the tax to be applied. The final amount of tax payable is dependent on the calculation method defined in the tax plan and the available account balances. The tax is only applied to cash balances and costs.

A tax plan can have multiple tax definitions associated to it.

Tax plan definition fields

This table describes the function of each field.

Note: All fields are mandatory.

Field	Description
Name	A unique name of the tax definition.
Percentage	The actual tax percentage to be applied. **Notes:** • Tax plan names must be unique within a customer's set of tax plans. • Percentage figures can include up to two decimal places. • Allowed range is within 0 to 100.
EDR Tag	Name used to identify this tax definition in an EDR. An abbreviated tax definition name appears in the EDR.

Editing tax definitions

Follow these steps to edit an existing tax definition.

1. In the New or the Edit Tax Plan screen, select the tax plan in the table and click **Edit**.

   Result: You see the Edit Tax Definition screen.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Tax plan definition fields.

3. Click **Save**.

   Result: You will be returned to the Edit Tax Plan screen and the new record will be displayed in the **Tax Definitions** table.

Related topic

Tax Plan

Deleting tax definitions

Follow these steps to delete an existing tax definition.

1. In the New or the Edit Tax Plan screen, select the tax plan in the table and click **Delete**.

   Result: You see the Delete Confirmation prompt.

2. Click **OK** to delete the record from the database.

Related topic

Tax Plan

Dynamic Quota Config

Dynamic Quota configurations are used to manage quota reservation. The VT (Validity Time), QHT (Quota Holding Time), and VQT (Volume Quota Threshold) are configurable based on the reservation configuration being used.

- Quota Holding Time (QHT) - How long a granted-quota is allowed to be idle before the reservation is needed to be released.
- Volume Quota Thresholds (VQT) - How much before the full consumption of the granted quota should the client request more.

When Dynamic Quota is enabled, the configured value of QHT and VQT are sent in CCA (credit-control-answer) messages.

Note:

- One Reservation Config can be associated to only one Dynamic Quota set.
- To enable Dynamic Quota set creation for any Reservation Config, **Dynamic Quota** check box for the same should be selected. By default, Dynamic Quota is disabled for any Reservation Config.

Topics:

Adding dynamic quota sets

Editing dynamic quota sets

Deleting dynamic quota sets

Dynamic Quota fields

Adding dynamic quota

Editing dynamic quota

Deleting dynamic quota

Adding dynamic quota sets

Follow these steps to add a new dynamic quota set.

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, click **New Set**.

   Result: You see the New Dynamic Quota Set screen.
3. In the **Name** field, type the name of the new dynamic quota set.
4. Select the reservation configuration from the **Res Config** drop down list.

   Tip: The Res Config shows only those Reservation Configurations for which dynamic quota is enabled and there are no dynamic quota already created for it.
5. In the **Validity Time (Secs)** field, enter the validity time.

   Tip: This validity time is used in all outgoing CCA messages, when dynamic quota is enabled.

   If TTC (charging based on Tariff Time Change) modifies validity time, then same is sent out and this configuration is not used.
6. In the **Quota Holding Time (Secs)** field, enter the quota holding time.

   Note: If this field is left blank, then QHT will not be sent in the outgoing messages.
7. Click **Save**.

   Note: Dynamic quota that do not have a reservation config associated with them are global.

Related topic

Dynamic Quota Config

Editing dynamic quota sets

Follow these steps to edit an existing dynamic quota set.

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, select the dynamic quota set to edit from the list displayed in the table.
3. Click **Edit Set**.

   Result: You see the Edit Dynamic Quota Set screen.
4. Modify the **Name** as required.
5. Modify the **Validity Time (Secs)** as required.
6. Modify the **Quota Holding Time (Secs)** as required.
7. Click **Save**.

Related topic

Dynamic Quota Config

Deleting dynamic quota sets

Follow these steps to delete an existing Dynamic Quota set.

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, select the dynamic quota set to delete from the list displayed in the table.
3. Click **Delete Set**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Dynamic Quota prompt.
5. Click **OK**.

Related topic

Dynamic Quota Config

Dynamic Quota fields

This table describes the function of each field.

Field	Description
Volume Start (data units)	Start of the range for a Volume Quota Threshold. **Allowed values**: Positive integers.
Volume End (data units)	End of the range for a Volume Quota Threshold. **Allowed values**: Positive integers.
Volume Quota Threshold (data units)	Volume Quota Threshold to be sent when the granted data units are between Volume Start & Volume End. **Allowed values**: Positive integers. **Tip:** Specify a value greater than or equal to Volume Start and less than Volume End.

Adding dynamic quota

Follow these steps to add a new Dynamic Quota..

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, select a dynamic quota set from the list displayed in the table to add a new dynamic quota to.
3. Click **New**.

   Result: You see the New Dynamic Quota screen for the relevant dynamic quota set.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Dynamic Quota fields.
5. Click **Save**.

Related topic

Dynamic Quota Config

Editing dynamic quota

Follow these steps to edit an existing Dynamic Quota..

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, select the dynamic quota set that contains the dynamic quota to edit from the list displayed in the table.
3. In the table at the bottom of the **Dynamic Quota Config** tab, select the record to edit.
4. Click **Edit**.

   Result: You see the **Edit Dynamic Quota** screen corresponding to the dynamic quota set.
5. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Dynamic Quota fields.
6. Click **Save**.

Related topic

Dynamic Quota Config

Deleting dynamic quota

Follow these steps to delete an existing dynamic quota.

1. In the Rating Management window, select the service provider from the Service Provider list.
2. On the **Dynamic Quota Config** tab, select the dynamic quota set that contains the dynamic quota to delete from the list displayed in the table.
3. In the table at the bottom of the **Dynamic Quota Config** tab, select the record to delete.
4. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Dynamic Quota prompt.
6. Click **OK**.

Related topic

Dynamic Quota Config

7

Rating Management - Named Event Catalogues

This chapter explains how to configure named event catalogues.

This chapter contains the following topics.

Named Event Catalogue

Named Events Table

Event Details

Named Event Overrides Grid

Configuring Overrides

Time Periods

Importing and Exporting Named Event Catalogues

Named Event Catalogue

A named event catalogue defines a list of named events and their overrides. On the **Named Event Catalogue** tab you can configure:

- The list of named events to include in the current catalogue
- General event overrides
- Time based event overrides, for example to cover holiday periods

Note: An override defines a period of time when the costs associated with the named event will be different or when the named event may be allowed or barred.

Tariff plan

You assign a named event catalogue to a tariff plan using the tariff plan selector. The named events included (and allowed) in the catalogue will then be available to all the product types that use this tariff plan.

When you assign a catalogue to a tariff plan, this also sets the date when the named event catalogue will become active.

For more information on the tariff plan selector, see Tariff Plan Selector.

Note: You can assign the same named event catalogue to more than one tariff plan.

Default catalogue

The default catalogue defines the default list of named events and event overrides. A product type will use the default catalogue if there is no tariff plan selector entry for the product type's tariff plan at the current time.

You can choose to include the default catalogue configuration in a named event catalogue by selecting the **Include Default** option.

If the current catalogue includes the default catalogue configuration, then the default configuration for the included events will be used unless specifically overridden by the configuration in the current catalogue.

Event rules

An event included in the named event catalogue can be either allowed or barred. This will depend on the overrides configured for the event.

Here are the rules used to determine whether or not an event will be allowed.

1. If no overrides have been configured for the event then it will be allowed by default.
2. If there is a general override in the current catalogue allowing the event then it will be allowed.
3. If there is a general override in the current catalogue barring the event then it will be barred.
4. If any time based overrides have been configured for the event to allow it or bar it, then the event will be either allowed or barred during the specified time period.

Here are the additional rules applying to the event if the default catalogue is included in the current catalogue:

1. The event will be barred if there is no general override in the current catalogue and there is a default general override barring the event.
2. A default time based override will override a general override in both the default and the current catalogue. This means that if any default time based overrides have been configured for the event to allow it or bar it, then the event will be either allowed or barred during the specified time period.
3. If a time based override has been configured for the same period in the default catalogue and in the current catalogue, then the override in the current catalogue will take precedence.

Named Event Catalogue tab columns

This table describes the content of each column.

Field	Description
Name	The catalogue name. **Note:** The first catalogue in the list is the current default catalogue.
Default Catalogue	Flag to indicate which is the default catalogue.

Field	Description
Include Default	Flag to indicate if the this catalogue also includes the default catalogue.
Use Holiday Set	The name of a Holiday set when one is used in this catalogue.

Setting the default named event catalogue

Follow these steps to set the default named event catalogue.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. In the table on the **Named Event Catalogue** tab, select the named event catalogue that you want to make into the default.

   Note: You must choose a named event catalogue which has the **Include Default** column set to 'No'.
3. Click **Make Default**.

   Result: You see the Confirm Change Default Catalogue prompt.
4. Click **Yes** to confirm.

   Result: The **Named Event Catalogue** table will be refreshed and the new default catalogue will be highlighted in bold at the top of the list.

Copying named event catalogues

You can copy the configuration for a named event catalogue to a new catalogue. This will copy:

- The include default value
- The use holiday set value
- Included named events
- Allow in catalogue values
- Event override configuration

Follow these steps to copy a named event catalogue.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, select the catalogue to copy.
3. Click **Copy**.

   Result: You see the Copy Existing Named Event Catalogue screen. The name of the catalogue you are copying is displayed in the screen.
4. In the **Name** field, type the name you want to use for the new catalogue that will be created by the copy process.
5. Click **Copy**.

   Result: The catalogue and its configuration is copied to the new name. The **Named Event Catalogue** tab is refreshed and you see the new catalogue listed on the tab.

Deleting named event catalogues

Follow these steps to delete a named event catalogue.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, select the catalogue to delete.

   Note: You may not delete any of:

   - The default catalogue
   - Any catalogue that has been associated with a tariff plan on the **Tariff Plan Selector** tab.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **Ok**.

   Result: The catalogue is removed from any named event records included in the catalogue and the catalogue is deleted.

Named Event Catalogue fields

These tables describe the function of each field on the New and the Edit Named Event Catalogue screens.

Field	Description
Name	The name of the named event catalogue.
Include Default	Select this check box to automatically include the named events and event overrides from the default named event catalogue in this named event catalogue.
Use Holiday Set	The Holiday Set to use for time based overrides. This field is populated by the **Holiday** tab. For more information, see Holiday Tariffs. **Note:** When set to "None" you will only be able to specify time based overrides for weekly and daily periods. You will not be able to specify time based overrides for holiday periods.

Display Filters

Field	Description
Event Sets	Filters the named events listed in the **Named Events** table based on the selected event set. When "All Sets" is selected, all the event sets configured for the current service provider will be listed. This field is populated by the **Named Event** tab. For more information, see Named Event.
Event Name	The name of the specific event to search for in the selected event set.
Include In Catalogue	Filters the events listed in the named events table based on the selected inclusion option. Select one of: • Included - to list only events that have been included in the catalogue • Included in Current and Default - to list only events included in the current and default catalogues • Included & Not Included - to list all events • Not Included - to list only events that are not included in the catalogue **Note:** This field is disabled for new named event catalogues and therefore appears grayed out in the New Named Event Catalogue screen.
Allowed In Catalogue	Filters the events listed in the **Named Events** table based on whether or not they have been allowed in the named event catalogue. Select one of: • Allowed - to list only events that have been allowed in the catalogue • Allowed & Barred - to list both allowed and barred events • Barred - to list only events that are barred in the catalogue **Note:** This field is disabled for new named event catalogues and therefore appears grayed out in the New Named Event Catalogue screen.
Max Rows	Defines the maximum number of rows that will be returned in the **Named Events** table. Defaults to 999.
Filter button	Activates the selected filters when clicked. **Result:** The **Named Events** table is populated with the filter results.

Named Events table

Field	Description
Event Set	List of event set names used.

Field	Description
I	Included flag. Events with this check box selected will be included in the catalogue. **Note:** Included events are automatically allowed in the catalogue. If you want to bar an event you must set up an override to do this.
Named Event	List of events grouped by event set name.
A	Allowed flag. Events with this check box selected will be allowed in the catalogue. **Note:** This check box cannot be changed in this screen. This check box is automatically set when either or both of the following are configured for the event: • General overrides • Time based overrides
Cash Cost	Lists the cash cost associated with each event. **Note:** This value is automatically updated by general overrides configured for the event.
Time Cost (Secs)	Lists the time cost associated with each event. **Note:** This value is automatically updated by general overrides configured for the event.
More Info	(+) in this column indicates that time based overrides have been configured for the event.

Note: Cost values of all types (Cash, Time, Data and Unit) are automatically updated by general overrides configured for the event.

Named Event Override Configuration table

Field	Description
Override Name	Unique name for the event override
Cash Cost	The cash amount to charge each time this named event occurs during the override period.
Time Cost (secs)	The time to charge each time this named event occurs during the override period.
A	Allowed flag. Events with this check box selected will be allowed in the catalogue.
General	Flag that indicates a general or time override. • **Yes** - no time based overrides are associated with this override • **No** - time based overrides have been configured

Adding named event catalogues

Follow these steps to add a new named event catalogue.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, click **New**.

   Result: You see the New Named Event Catalogue screen.
3. In the **Name** field, type a unique name for the new catalogue.

   Warning: Data may be lost up until the **Save** is clicked.
4. To include the default named event catalogue definition, select the **Include Default** check box.
5. To specify time based overrides for holiday periods, select the required holiday set from the **Use Holiday Set** drop down list.
6. Optionally, use the **Display Filters** section in the New or Edit Named Event Catalogue screen to specify the criteria to constrain the entries in the **Named Events** table.

   For more information on the fields in this section, see Named Event Catalogue fields.
7. Optionally, click **Filter**.

   Result: All the events that match the specified filter criteria are listed on the **Named Events** table. For an example showing a list of filtered events, see Named Events table example.
8. In the **Named Events** table, select the check box in the "**I**" column for the events to include in the catalogue.

   Result: The event is highlighted in bold.
9. Add overrides to the included events as required. For more information on adding:
   - A general override, see Adding a general override
   - Time based overrides, see Adding a time based override
10. Perform one of the following actions:
    - Click **Save** to save the record without closing the New Named Event Catalogue screen
    - Click **Save and Close** to save the record and return to the **Named Event Catalogue** tab

Related topic

Named Event Catalogue

Editing named event catalogues

Follow these steps to edit an existing named event catalogue.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, select the catalogue to change and click **Edit**.

   Result: You see the Edit Named Event Catalogue screen.

   Note: If you are editing the default catalogue you will see a warning at the top of the screen.
3. Edit the fields in this screen to reflect the changes you need to make.

For more information on the fields in this screen, see Named Event Catalogue fields.

4. If you want to include some events that are not currently included in the catalogue, you will need to filter the events list.

   For details, see Filtering named events.

   Tip: Select "Included and Not Included" from the **Include In Catalogue** drop down list to see a full list of events for the selected Event Set.

5. Select the check box in the "**I**" column for the events you want to include in the catalogue.

6. Add, edit and delete overrides for the included events as required.

   For more information, see Configuring Overrides.

   Note: Any changes you make to the defined overrides will be shown in the Edit Named Event Catalogue screen. However, they will not be saved to the database until you save the named event catalogue record itself.

7. Perform one of the following actions:

   - Click **Save** to save the record without closing the Edit Named Event Catalogue screen
   - Click **Save and Close** to save the record and return to the **Named Event Catalogue** tab

Related topic

Named Event Catalogue

Named Events Table

The table in the **Named Events** area of the New and the Edit Named Event Catalogue screen displays a list of named events. When you open:

- The New Named Event Catalogue screen, all the available events are displayed
- The Edit Named Events Catalogue screen, only the events currently included in the catalogue are displayed

You can filter the events listed to display a different set of events. For more information on filtering events, see Filtering named events.

Event display attributes

Events are displayed with the following attributes:

- **bold** – If they are included in the current catalogue
- normal font – If they are included in the default catalogue but have not been included in the current catalogue
- *italics* – If they are not included in either the current catalogue or the default catalogue

Filtering named events

Follow these steps to filter the events listed in the **Named Events** table so that only relevant events are displayed.

1. In the fields in the **Display Filters** section in the New or the Edit Named Event Catalogue screen, specify the criteria to use to filter named events.

   For more information on the fields in this section, see Named Event Catalogue fields.

2. Click **Filter**.

   Result: All the events that match the specified filter criteria are listed on the Named Events table.

Event Details

You can view details for an event selected in the **Named Events** table. The details show the derived values for the event after applying general overrides from the default and current catalogues.

Note: The event details do not show how the event will be affected by any time based overrides that have been configured.

Event details fields

This table describes the function of each field in the Named Events table in the Event Details screen.

Field columns	Description
Event Parameter	Lists the names of the event parameters.
Derived Value	Lists the derived values for the event parameters after any general overrides have been applied. **Note:** A general override will only be applied if the Allowed parameter for the override is set to Allowed.
Current General Override	Lists the general override values configured for this event in the current catalogue. **Note:** This column will only appear if a general override has been configured for the event in the current catalogue.
Default General Override	Lists the general override values configured for this event in the default catalogue. **Note:** This column will only appear if the default catalogue includes this event and a general override is configured for it.
Base Event	Lists the base values configured for the event on the **Named Events** tab.

Click **Close** when you have finished viewing the event details.

Named Event Overrides Grid

The table in the **Named Event Override Configuration** area lists the overrides that have been configured for the currently selected Named Event in the New and the Edit Named Event Catalogue screen or defined as a default override for the default catalogue. You can:

- Add, modify and delete non-default overrides for the event in the current catalogue
- View the overrides configured for the event in the default catalogue

For more information about:

- Adding and modifying non-default overrides, see Configuring Overrides
- Deleting non-default overrides, see Deleting overrides

Override display attributes

Overrides are displayed in:

- **bold** – If they have been configured for the event in the current catalogue
- *italics* – If they have been configured for the event in the default catalogue

Default overrides

The overrides configured for the event in the default catalogue will be displayed in the list of overrides if the default catalogue is included in the current catalogue.

If the default catalogue is not included in the current catalogue, then only overrides configured for the event in the current catalogue will be listed.

Viewing default overrides

Follow these steps to view the override configuration defined for an event in the default catalogue.

1. In the **Named Events** table select the required event.

   Result: The overrides defined for the event are listed in the table in the Named Event Override Configuration area.

2. In the **Event Overrides** table, select the *default override* to view.

   Result: The **View** button replaces the **Edit** button.

   Note: Default overrides are displayed in the table in *italics*.

3. Click **View**.

   Result: You see the View Named Event Override Dialog screen.

   Note: This is a non-editable screen.

4. When you have finished viewing the override, click **Cancel**.

   Result: You are returned to the previous screen.

Configuring Overrides

You can configure overrides for the events included in the named event catalogue. The override values will be used instead of the base or default values defined for the event. An override can be:

- General
- Time based

General override

You can configure one general override only for each event included in the current catalogue. This will be active at all times except during the specific periods when a time based override is active.

Time based override

You can configure any number of time based overrides for the events included in the current catalogue. Each override can have multiple time periods associated with it. These define the time periods during which the override will be active.

Adding overrides

Follow the procedure below, to add a named event override, depending upon the override being:

- Adding a general override
- Adding a time based override

Related topic

Configuring Overrides

Adding a general override

A general override is one that has no time based overrides.

Follow these steps to add a general override.

1. On the **Named Events** table in the New or the Edit Named Event Catalogue screen, select the event to add a general override to.

   Note: You will not be able to add more than one general override to an event.

2. Ensure the event is included in the catalogue.

   Tip: To include an event, select the **I** (included) check box for the event.

3. In the **Named Event Override Configuration** section, click **New**.

   Result: You see the New Named Event Override Dialog.

4. In the **Override Name** field, type the name of the override.

5. To bar the event, ensure the **Allowed** check box is not selected.

   Note: The event will be allowed by default.

6. In the **Override Values** section, select the **Override** check box for fields to override, then specify the required override values.

   For more information about these fields, see Named event override fields.

7. Do not add any time period data.

8. Click **Update**.

   Result: The override will be listed in the **Named Event Override Configuration** table and the:

   - General column for the override will be set to `Yes`.
   - The "**A**" column for the override will be selected.

Adding a time based override

Follow these steps to add a new time based override.

Note: Adding a time based override to a named event, sets the **More Info** column for the event in the **Named Events** table to (+).

1. On the **Named Events** table in the New or the Edit Named Event Catalogue screen, select the event to add the override to.

2. Ensure the event is included in the catalogue.

   Tip: To include an event, select the **I** (included) check box for the event.

3. In the **Named Event Override Configuration** area, click **New**.

   Result: You see the New Named Event Override Dialog.

4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Named event override fields.

5. In the **Time Periods** area, add the required time periods.

   For more information, see Adding time periods.

6. Click **Update**.

   Result: The:

   - Override will be listed in the **Named Event Override Configuration** table.
   - General column for the override will be set to `No`, and
   - **More Info** column for the event in the Named Events table is set to `(+)`.

Named event override fields

This table describes the function of each field.

Field	Description
Override Name	Unique name for the event override
Allowed	Sets whether the event is allowed or barred when the override is in effect. **Note:** This field will be set to Allowed by default.

Field	Description
Free Event	When selected, this event has zero charge.
Override check boxes	Select these as relevant to enable the override field to be set.
Cash Cost	The new cash amount to charge for this named event override.
Time Cost (secs)	The new time amount to charge for this named event override.
Data Cost (data units)	The new data amount to charge for this named event override.
Unit Cost	The new units amount to charge for this named event override. **Note:** The Unit Cost is charged for balances that do not have cash, time, or data units (for example, SMSes).
Expenditure Plan	Sets whether this cost is included in expenditure calculations and defines the expenditure plan to use. To select an expenditure plan from the drop down list, select the **Override** check box. This field is populated by the **Expenditure Plan** tab. For more information, see Expenditure Plan.
Contributes to Promotional Destination	Sets whether this cost is included in the promotional destination calculations. To enable this field, select the **Override** check box.
Event Cascade	The balance type cascade that defines the order for using the balances for this named event. To enable this field, select the **Override** check box. This field is populated by the records on the **Balance Type Cascades** tab. For more information, see Balance Type Cascades.
Use Single Balance	Sets whether the cost of the event should be taken from a single balance. To enable this field, select the **Override** check box. **Notes:** • If this field is selected and there is no single balance that can cover the entire cost of an event, the event is declined with insufficient credit. • If this field is not selected, the event will be accepted, providing its entire cost can be satisfied with the selected cascade. The seconds and cash costs are taken pro-rata as necessary from each balance.

Field	Description
Time Periods table	Lists the time periods when these override values will be used instead of base, default or general override values for this event. • Types – The override type • Start Time – The start time when the override values will apply • End Time – The end time after which the override values will no longer apply • Holiday – The named event catalogue holiday set used **Note:** If no time periods are defined, this override configuration will be classed as a general override.

Editing overrides

Follow these steps to modify an override for an event.

Tip: The "(+)" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

1. On the **Named Events** table in the New or the Edit Named Event Catalogue screen, select the event where the override to modify is defined.

   Result: The overrides that have been defined for the event will be displayed in the **Named Event Override Configuration** table.

   Note: You must select an event that is included in the catalogue.

2. In the **Named Event Override Configuration** table, select the override to modify and click **Edit**.

   Result: You see the Edit Named Event Override Dialog.

3. Edit the fields in this screen to reflect the changes you need to make.

   For information on:

   - Override fields, see Named event override fields
   - Adding time periods, see Adding time periods
   - Editing time periods, see Editing time periods
   - Deleting time periods, see Deleting time periods

4. Click **Update**.

Related topic

Configuring Overrides

Deleting overrides

You can delete overrides that have been configured for events. You can delete:

- All the configured overrides for one or more selected events
- One or more selected overrides for a specific event

Related topic

Configuring Overrides

Deleting overrides for selected events

Follow these steps to delete all the configured overrides for a selected event or a group of events.

Tip: The "(+)" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

1. On the **Named Events** table in the New or the Edit Named Event Catalogue screen, select the event(s) for which to delete all overrides. To select:
   - All the events in the table, click **Select All**
   - A group of events in the table, select the first event in the group and then hold down the **Shift** key while selecting the last event in the group

   Tip: You can de-select a single event in a group by holding down **Ctrl** while selecting the event again.
2. Click **Delete Overrides**.

   Result: You see the Delete Confirmation prompt for the selected events.
3. Click **OK**.

   Result: The overrides are deleted.

   Note: If you are in the Edit Named Event Catalogue and you close it without saving, then any deletions you have made will be lost.

Deleting selected overrides

Follow these steps to delete one or more overrides for a selected event.

Tip: The "(+)" value in the **More Info** column for an event in the **Named Events** table indicates that one or more time based overrides have been defined for it.

1. On the **Named Events** table in the New or the Edit Named Event Catalogue screen, select the event where the overrides to delete are configured. You must select an event that is included in the catalogue.

   Result: The overrides that have been configured for the event will be displayed in the **Named Events Override Configuration** table.
2. In the **Named Event Override Configuration** table, select the override(s) to delete. You can select more than one. To select:
   - All the overrides, click **Select All** in the **Named Events Override Configuration** area
   - A group of overrides, select the first override in the group and then select the last override in the group while holding down the **Shift** key

   Tip: You can de-select an override by pressing **Ctrl** and selecting the override at the same time.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt for the selected override(s).

4. Click **OK**.

   Result: The selected overrides are removed from the **Named Events Override Configuration** table.

   Note: If you are in the Edit Named Event Catalogue screen and you close it without saving, then any deletions you have made will be lost.

Time Periods

Time period fields

This table describes the function of each Time Period field.

Field	Description
Type	Lists the available time period types. Only relevant fields will be enabled for the selected type. Available types are: • Daily • Weekly • Holiday **Note:** Holiday type time periods will only be available if a holiday set has been specified in the named event catalogue definition.

Holiday fields

Field	Description
Holiday	Lists the available holiday periods. This field is populated from the holidays defined for the named event catalogue's holiday set.
Start Time (Local TZ)	Sets the start time on the first day of the holiday period when the override will become active.
End Time (Local TZ)	Sets the end time on the last day of the holiday period after which the override will no longer be active.

Weekly fields

Field	Description
Start Day	Defines the first day of the week that the override will apply on.
End Day	Defines the last day of the week that the override will apply on.
Start Time (Local TZ)	Sets the start time on the first day of the week when the override will become active.
End Time (Local TZ)	Sets the end time on the last day of the week after which the override will no longer apply.

Daily fields

Field	Description
Day check boxes	A select in a check box for a day means that overrides will apply on that day. **Tip:** You can select more than one day.
Start Time	Sets the start time when the override values will apply for each day included in Daily periods.
End Time	Sets the end time after which the override values will no longer apply for each day included in Daily periods.

Adding time periods

Follow these steps to add a new time period to an event override.

1. In the **Time Periods** area in the New or the Edit Named Event Override Dialog, click **New**.

   Result: You see the New Time Period Dialog.

2. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Time period fields.

3. Click **Update**.

   Result: The new period is listed in the Time Periods table.

Related topic

Time Periods

Editing time periods

Follow these steps to edit a time period for an event override.

1. In the **Time Periods** area in the New or the Edit Named Event Override Dialog, select the time period to change and click **Edit**.

   Result: You see the Edit Time Period Dialog.

2. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Time period fields.

3. Click **Update**.

Related topic

Time Periods

Deleting time periods

Follow these steps to delete a time period for an override.

1. In **Time Periods** area in the New or the Edit Named Event Override Dialog, select the time period to delete.
2. Click **Delete**.

Result: You see the Delete Confirmation record.

3. Click **OK**.

Related topic

Time Periods

Importing and Exporting Named Event Catalogues

The **Import** and **Export** buttons on the **Named Event Catalogue** tab allow you to import and export named event catalogue data. Use this facility to create named event catalogue data externally, using third party tools, before importing it into CCS.

Note: Named event catalogue data is exported to file and imported from file in XML format. Refer to the files in the **/IN/html/Ccs_Service/xml/productCatalogue** directory on the SMS for more information.

Data import

Use the import named event catalogue facility to import new named event catalogue definitions from file.

When you import a named event catalogue, the import file is pre-parsed to check that it conforms to the import file specification. If there are any errors in the import file then the import process will fail. Any changes that have been made to the database will be rolled back and the details of the lines/sections in the import file containing the error will be reported to the user.

Warning: You cannot update or delete existing named event catalogues using this facility.

Data export

Use the export facility to export a named event catalogue definition to a specified file.

When you export a named event catalogue definition, all the data that is related to the selected catalogue is exported. This includes the following data:

- The name of the selected catalogue
- Include default value
- Associated holiday set
- Included values
- Allowed values
- Override configuration (general and time-based)

Importing named event catalogues

Follow these steps to import a named event catalogue from file.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, click **Import**.

Result: You see an Import screen.

3. Select the folder which holds the import file.
4. In the **File name** field, enter the import file name.

   Warning: The import file type must be XML.
5. Click **Import**.

   Result: You see the Confirmation screen.
6. Click **Continue**.

   Result: You see an Import successful prompt.
7. Click **OK**.

Exporting named event catalogues

Follow these steps to export a named event catalogue and its related data to file.

1. In the Rating Management window, select the service provider from the **Service Provider** list.
2. On the **Named Event Catalogue** tab, select the catalogue to export and click **Export**.

   Result: You see an Export screen.
3. Select the folder in which to store the export file.
4. In the **File name** field, enter the export file name.

   Warning: The export file type must be set to XML.
5. Click **Export**.

   Result: You see an Export successful dialog.
6. Click **OK**.

8

Service Management

This chapter explains the service management section of CCS.

This chapter contains the following topics.

Service Management Module

Domain

Currency Code

Currency

Global Configuration

Exchange Rates

Resource Limits

Barred List

Capability

Number Translation List

MFile Generation

Balance Type Mapping

Security

About Voucher Security

About Credit Card Security

Splash Screen Configuration

Channel

Service Management Module

The Service Management screen enables you to configure the service management section of CCS. It contains these tabs:

- Balance Type Mapping
- Barred List
- Capability
- Channel
- Currency
- Currency Code
- Domain

- Exchange Rates
- Global Configuration
- MFile Generation
- Number Translation List
- Resource Limits
- Security
- Splash Screen Configuration

Accessing the Service Management screen

Follow these steps to open the Service Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > Service Management**.

   Result: You see the Service Management screen.

Configuration sequence

This table lists the configuration sequence required to correctly set up the service management part of CCS.

Note: Same numbers indicate configuration independence within the sequence.

Sequence	Data Type
1	Domain
1	Currency Code
2	Currency
3	Global Configuration
3	Resource Limits
4	Exchange Rates
4	Capability
5	Product Type
6	Barred List
6	Number Translation List
6	Security
6	Splash Screen Configuration
6	Balance Type Mapping
6	Channel

Domain

You use the **Domain** tab to configure the following types of domains:

- VWS (Voucher and Wallet Server)
- DIAMETER
- Third-party

- BRM

The tab displays a list of the domains that have been configured. You can configure new domains, and edit, or delete exiting domains.

Topics:

About Domain Configuration Issues

Domain fields

Third-Party domain fields

Creating a Domain

Adding nodes to domains

Adding realms to domains

Editing Domains

Editing domain nodes

Editing domain realms

Deleting domains

Deleting domain nodes or realms

About Domain Configuration Issues

When you add a new domain or edit an existing domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, for any domains that are incorrectly configured. The system automatically updates this list as you resolve the issues by updating the domain configuration. You must resolve all the domain configuration issues before saving the domain.

The following table lists the possible configuration issues, and their resolutions:

Configuration Issue	**Resolution**
Invalid Name	Specify a unique name for the domain in the **Name** field.
Not Enough Checkboxes	Select the check boxes in the **Manages** area for the features you require. You must select at least one check box.
Invalid Maximum Accounts	Specify a valid number in the **Maximum Accounts** field.
Invalid Maximum Queue Messages	If specified, the value for **Maximum Queue Messages** must be greater than the value for **Minimum Queue Messages**.
Not Enough Domain Nodes	For VWS and DIAMETER domains, you must configure at least one domain node in the **Nodes / Realms** area.
Invalid Username	For BCD domains, you must specify a valid user name of at least one character.
Invalid Password	For BCD domains, you must specify a valid password of at least one character.

Domain fields

This table describes the domain fields in the **BE** area of the Domain screen.

Field	Description
Name	(Required) The unique name of the domain.
Type	(Required) Sets the domain type for this domain. The domain type defines the network element type (such as a Voucher and Wallet Server) for the domain nodes in this domain. The list of available domain types is populated when applications are installed. The domain type for the Voucher and Wallet Server is always available. Once you have added a node to a domain, this field becomes non-editable. For more general information about domain types, see Domain Types. For information about the domain type to choose for an additional installed application, see the application's technical guide.
Maximum Accounts	(Required) Sets the maximum number of subscriber accounts that can be supported by the domain.
Update Username and Password	Select to allow a BCD Client to connect to the BRM communication managers.
Username	Sets the username to use to connect to the BRM communication managers.
Password	Sets the username's password.
Wallet Management Charging	Whether or not wallet management charging functionality is supported for this domain. 'Y' means wallet management charging functionality is supported by the domain and 'N' means it is not. For more information about wallet functionality, see: • Wallet Management • Edit Wallets
Wallet Management Tracking	Whether or not wallet management tracking functionality is supported for this domain. 'Y' means wallet management tracking functionality is supported by the domain and 'N' means it is not. **Note:** Wallet management tracking is only available to UBE domain types.

Field	Description
Voucher Management	Whether or not voucher management (including voucher redemption) is supported for this domain. 'Y' means voucher functionality is supported by the domain and 'N' means it is not. For more information about voucher functionality, see Voucher Management.

Third-Party domain fields

This table describes the fields in the **Third-Party** area of the Domain screen. For details on a particular field, see the technical documentation for the application that provides connectivity with the required network element.

Field	Description
Minimum Queue Messages	Minimum queue messages value for third-party billing.
Maximum Queue Messages	Maximum queue messages allowed before the connection is deemed congested.
Allow Adaption	Select if adaption is required for third party billing.
Connection Retry	The number of connection retries allowed.
Enable Guidance	Select if guidance is required for third-party billing. The guidance cache size field becomes enabled.
Message Timeout	Message timeout value for third-party billing.
Guidance Cache Size	Guidance cache size for third-party billing.

Creating a Domain

When you add a new domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, warning you about any configuration that is incorrect. The system automatically updates this list as you configure the domain. For more information about configuration issues, see About Domain Configuration Issues.

Follow these steps to add a new domain.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Click **New** on the **Domain** tab.

   Result: The New Domain screen displays.

   For information about the fields and check boxes in the New Domain screen, see Domain fields.
3. In the **Name** field, enter a unique name for the domain.
4. From the **Type** list, select one of the following domain types:
   - UBE
   - A third-party type BE
   - A domain type with a DIAMETER prefix

- BCD (for BRM)

The domain type you select determines which fields are enabled. Fields that are disabled, appear grayed out.

Note: The domain type for the Voucher and Wallet Server is UBE.

5.

6. Complete the fields as required. For details about the data to enter for the type of domain you want to create, see:
   - Specifying a UBE Domain
   - Third-Party domain fields
   - Specifying a Diameter Domain
   - Specifying a BRM Domain
7. Click **Save**.

   Result: The new domain is saved, and listed on the **Domain** tab.

Related topic

Domain

Specifying a UBE Domain

To specify a UBE domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the features you require.
- Add at least one domain node to this domain. See Adding nodes to domains.

  You can edit or delete domain nodes as required. For information about editing domain nodes, see Editing domain nodes. For information about deleting domain nodes, see Deleting domain nodes or realms.

For more information about the fields and check boxes on the Domain screen, see Domain fields.

Specifying a Third-Party Domain

To specify a third-party domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the features you require.
- In the **Third-Party** area, fill in the relevant fields, as described in Third-Party domain fields.
- Add at least one domain node to this domain. See Adding nodes to domains.

  You can edit or delete domain nodes as required. For information about editing domain nodes, see Editing Domains. For information about deleting domain nodes, see Deleting domain nodes or realms.

For more information about the non-third-party fields and check boxes on the Domain screen, see Domain fields.

Specifying a Diameter Domain

To specify a Diameter domain, complete the following fields:

- Type the number of allowed accounts in the **Maximum Accounts** field.
- Select the **Manages** check boxes for the required features.
- In the **Third-Party** area, fill in the **Minimum Queue Messages**, **Maximum Queue Messages** and **Connection Retry** fields, as described in Third-Party domain fields.
- Add at least one realm to this domain. See Adding realms to domains.

  You can edit or delete realms as required. For information about editing domain realms, see Editing domain realms. For information about deleting domain realms, see Deleting domain nodes or realms.

For more information about the non-third-party fields and check boxes on this screen, see Domain fields.

Specifying a BRM Domain

To specify a BRM domain, complete the following fields:

- In the **Name** field, enter `BRM`
- From the **Type** list, select **BCD**
- In the **Maximum Accounts** field, enter the maximum number of accounts in this domain.
- Select the **Update Username and Password** check box and enter values for **Username** and **Password**, which are used by the BCD Client to connect to the BRM communication managers.
- (Optional) In the **Manages** area, select the **Charging** and **Voucher Management** check boxes.

For more information about the fields and check boxes on the Domain screen, see Domain fields.

Adding nodes to domains

Follow these steps to add a node to a domain.

1. From either the New Domain or Edit Domain screen, click **New**.

   Result: The New Domain Node screen appears.
2. Type a unique name for the node in the **Name** field.
3. Select the **Node Number** from the drop down list (the node number must be unique). This is a required field for UBE domains, and optional for third-party domains.

   Notes:

   - Where there is more than one node for a domain, the primary node has the lower number.
   - UBE is the domain type for a Voucher and Wallet Server.
4. Type the IP address for the node in the **Address** field.

Note: This field is automatically populated if you select a **Node Number.** You can edit this address if required.

5. Type the client port address in the **Client Port** field.
6. Type the internal port address in the **Internal Port** field.
7. If this is a third-party domain, enter values for the following fields. See the relevant third-party billing technical documentation for more information:
   - **Minimum Weight**
   - **Maximum Weight**
   - **Stable Weight**
   - **Unstable Weight**

   Note: These fields appear grayed out for UBE domain nodes.
8. Click **Save**.

   Result: The new node is saved and then listed in the **Nodes / Realms** area of the New or Edit Domain screen.

Related topic

Domain

Adding realms to domains

Follow these steps to add a realm to a diameter domain.

1. From either the New Domain or Edit Domain screen, click **New**.

   Result: The New Domain Realm screen appears.
2. Type a unique name for the realm in the **Name** field.
3. Type the identity of the realm in the **Identity** field.

   Example: `realm1.telcoexample.com`
4. (Optional) Enter a value in the **Stable Weight** field. Defaults to 1.
5. Click **Save**.

   Result: The new realm is saved and then listed in the **Nodes / Realms** area of the New or Edit Domain screen.

Related topic

Domain

Editing Domains

When you edit a domain, the system displays a list of issues in the **Configuration Issues** area of the Domain screen, warning you about any configuration that is incorrect. The system automatically updates this list as you edit the domain configuration. For more information about configuration issues, see About Domain Configuration Issues.

Follow these steps to edit a domain.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the domain to edit from the table in the **Domain** tab.
3. Click **Edit**.

   Result: The Edit Domain screen appears.
4. Change the following fields as required:
   - Domain name in the **Name** field
   - Maximum number of accounts in the **Maximum Accounts** field
   - **Wallet Management Charging** and **Wallet Management Tracking** check boxes (Tracking is not available when Domain Type is BCD)
   - **Voucher Management** check box.

   See Domain fields for a description of these fields and check boxes.
5. If this is a non-UBE domain, you may also change the following fields as required. If the domain is:
   - BCD:
     - **Update Username and Password** check box
     - **Username**
     - **Password**
   - third-party:
     - **Minimum Queue Messages**
     - **Maximum Queue Messages**
     - **Connection Retry**
     - **Allow Adaptation** check box
     - **Message Timeout**
     - **Enable Guidance** check box and **Guidance Cache Size**
   - DIAMETER:
     - **Minimum Queue Messages**
     - **Maximum Queue Messages**
     - **Connection Retry**

   For details, see the relevant BCD, third-party billing or Diameter technical documentation.

   Note: UBE is the domain type for a Voucher and Wallet Server.
6. Depending on the type of domain:
   - For UBE and third-party domains, you can edit the domain nodes as required. See Adding nodes to domains, Editing domain nodes or Deleting domain nodes or realms procedures.
   - For DIAMETER domains, you can edit the domain realms as required. See Adding realms to domains, Editing domain realms, or Deleting domain nodes or realms.
7. Click **Save**.

   Result: The domain changes are saved and reflected in the **Domain** tab table.

Related topic

Domain

Editing domain nodes

Follow these steps to edit a domain node.

1. From the table in the **Nodes / Realms** area in either the New Domain or Edit Domain screen, select the node you want to update and click **Edit**.

   Result: The Edit Domain Node screen appears.

2. Update the following fields as required:
   - Node address in the **Address** field
   - Client port address in the **Client Port** field
   - Internal port address in the **Internal Port** field
3. If this is a third-party domain, update the following fields as required. See the relevant third-party billing technical documentation for more information:
   - **Minimum Weight**
   - **Maximum Weight**
   - **Stable Weight**
   - **Unstable Weight**

   Note: These fields appear grayed out for UBE domain nodes.
4. Click **Save**.

   Result: The node is saved.

Related topic

Domain

Editing domain realms

Follow these steps to edit a domain realm.

1. From the table in the **Nodes / Realms** area of either the New Domain or Edit Domain screen, select the realm you want to update and click **Edit**.

   Result: The Edit Domain Realm screen appears.

2. Update the following fields as required:
   - **Identity**
   - **Stable Weight**
3. Click **Save**.

   Result: The realm is saved.

Related topic

Domain

Deleting domains

Follow these steps to delete a domain.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the domain to delete from the table in the **Domain** tab.
3. Click **Delete**.

   Result: The Delete Confirmation screen appears.
4. Click **OK**.

   Result: The domain is deleted from the Domain tab table.

Related topic

Domain

Deleting domain nodes or realms

Follow these steps to delete a node or a realm from a domain.

1. From the table in the **Nodes / Realms** area of either the New Domain, or Edit Domain screen, select the node or realm that you want to delete, and click **Delete**.

   Result: The delete confirmation screen appears.
2. Click **Apply**.

   Result: The node or realm is marked for deletion. It is then deleted from the database when you click **Save** in the Edit or New Domain screen.

   Note: To be able to save the domain in the Domain screen, the domain must have at least one node or realm configured.

Related topic

Domain

Currency Code

The **Currency Code** tab enables you to view, create, edit and delete the currency codes that are available in the system.

Topics:

Adding a Currency Code

Editing a Currency Code

Deleting a Currency Code

Adding a Currency Code

Follow these steps to add a new currency code.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Currency Code** tab, click **New**.

   Result: You see the New Currency Code screen.
3. Enter the three-letter currency code in the **Code** field.
4. Enter a description of the currency code in the **Description** field.
5. Click **Save**.

Related topic

Currency Code

Editing a Currency Code

Follow these steps to edit an existing currency code.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the currency code to edit from the table on the **Currency Code** tab.
3. Click **Edit**.

   Result: You see the Edit Currency Code screen.
4. If required, change the three-letter currency code in the **Code** field.
5. If required, change the description of the currency code in the **Description** field.
6. Click **Save**.

Related topic

Currency Code

Deleting a Currency Code

Follow these steps to delete an existing currency code.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the currency code to delete from the table on the **Currency Code** tab.
3. Click **Delete**.

   Result: The Delete Confirmation prompt appears.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and the Currency prompt is displayed.
5. Click **OK**.

Related topic

Currency Code

Currency

The **Currency** tab enables you to:

- Configure the default system currency
- View currencies which have been set up in the system

When setting up the system for the first time, it is important to set the default currency before configuring the rest of the system (and after configuring the VWSs).

For each new currency entered into the system, a rate of exchange between the new currency and the system currency must be set. This exchange rate is set on the **Exchange Rates** tab of the Service Management screen.

Topics:

Currency entry components

Recharging Credit Cards - required components

Currency details

Announcements

Recharges 1-5

Recharges 6-9

Editing a currency

Deleting a currency

Currency entry components

When adding a new currency to CCS, a number of inter-related components must be completed before the new currency can be used.

These components are configurable from the New Currency and Edit Currency screens, and are as follows:

- Configure Announcements
- Configuring Recharge Options 1-5
- Configuring Recharge Options 6-9

Recharging Credit Cards - required components

The following currency components are required for recharging credit cards.

- Configuring Recharge Options 1-5
- Configuring Recharge Options 6-9

The actual recharge options are defined in the **Product Type** tab, Creditcard Recharge Rules.

Each caller has a maximum of nine recharge options per currency available. The announcement entry and set are selected for each option. The option announcements work as follows:

Caller options	The system will play the balance announcement...
1	followed by the “Press * to cancel” as defined by the announcement set selected in the **One option** section.
2	followed by the “Press * to cancel” as defined by the announcement set selected in the **Two options** section.
3	followed by the “Press * to cancel” as defined by the announcement set selected in the **Three options** section.
4	followed by the “Press * to cancel” as defined by the announcement set selected in the **Four options** section.
5	followed by the “Press * to cancel” as defined by the announcement set selected in the **Five options** section.
6	as defined by the announcement set selected in the **Five options and on** section. *Plus* the recharge announcement set selected in the **Recharge option six** section followed by the “Press * to cancel”
7	as defined by the announcement set selected in the **Five options and on** section. *Plus* the recharge announcement set selected in the **Recharge options 6-7** section followed by the “Press * to cancel”
8	as defined by the announcement set selected in the **Five options and on** section. *Plus* the recharge announcement set selected in the **Recharge options 6-8** section followed by the “Press * to cancel”
9	as defined by the announcement set selected in the **Five options and on** section. *Plus* the recharge announcement set selected in the **Recharge options 6-9** section followed by the “Press * to cancel”

Example announcements

A caller has six options for their account.

The first announcement, defined in the **Five options and on** field, is configured to play the following:

"Your balance is `x Big_Currency` and `y Small_Currency`

To recharge by `Recharge_Option_1 Big_Currency`, press 1

To recharge by `Recharge_Option_2 Big_Currency`, press 2

To recharge by `Recharge_Option_3` `Big_Currency`, press 3

To recharge by `Recharge_Option_4` `Big_Currency`, press 4

To recharge by `Recharge_Option_5` `Big_Currency`, press 5"

The next announcement, defined in the **Recharge option six** field, will play the following:

"To recharge by `Recharge_Option_6` `Big_Currency`, press 6

Press * to cancel."

If `Big_Currency` is dollars and `Small_Currency` is cents, the announcements played would be like this:

"Your balance is two dollars and twenty five cents

To recharge by five dollars press 1

To recharge by ten dollars press 2

To recharge by twenty dollars press 3

To recharge by fifty dollars press 4

To recharge by one hundred dollars press 5"

"To recharge by two hundred dollars, press 6

Press * to cancel."

Currency details

All configuration options must be completed to finalize a currency so it can be used. However, the configuration can be saved at any point by clicking **Save**.

To configure a currency as a default currency for the system, configure the currency here, and then set it as the default in the Global Configuration screen.

Follow these steps to add currency details for a new currency.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Currency** tab, click **New**.

   Result: The New Currency screen displays with the Currency options.
3. Enter the symbol that represents the main unit of the currency in the **Big Symbol** field (for example, `€` for euros).
4. Enter the symbol that represents the subunit of the currency in the **Little Symbol** field (for example, `c` for cents).
5. Select the currency name from the **Name** drop down box.

   Note: Only valid currency names are available from the list.

   Result: The **Currency Code** field is populated by the system. This shows the currency code that identifies the currency.
6. Enter the separator used to separate the main unit from the subunit of the currency in the **Separator** field.

Examples: In the currency of:

- Euros - the separator is a comma (for example, 3,20)
- Dollars - the separator is a decimal point (for example, $4.00)

7. Enter the ratio of subunits to main units of currency in the **Base** field.

   Example: 100 cents per euro = a ratio of 100.

8. Click **Save**.
9. Configure the Announcements.
10. Configure the announcements for Recharge options 1-5.
11. Configure the announcements for Recharge options 6-9.

Related topic

Currency

Announcements

Follow these steps to add the confirmation prompt announcement for a new currency.

1. Select the **Configure Announcements** option in the New Currency screen.

   Result: You see the Configure Announcements option, displaying the Confirmation Prompt configuration.

2. Select from the **Confirmation Prompt** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller when prompting for caller confirmation of a recharge
3. Click **Save**.

Recharges 1-5

Follow these steps to add the announcements for recharge options 1-5 for a new currency.

1. Select the **Recharge options 1-5** option in the New Currency screen.

   Result: You see the Recharge options 1-5, displaying announcements for currency Recharge one to five, plus more than five.

2. Select from the **One option** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have one recharge option
3. Select from the **Two options** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have two recharge options.
4. Select from the **Three options** section:
   - The Announcement Set from the **Set** drop down box

- The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have three recharge options.

5. Select from the **Four options** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have four recharge options.
6. Select from the **Five options** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have five recharge options.
7. Select from the **Five options and on** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have more than five recharge options.
8. Click **Save**.

Recharges 6-9

Follow these steps to add the announcements for recharge options 6-9 for a new currency.

1. Select the **Recharge options 6-9** option from the New Currency screen.

   Result: You see the Recharge options 6-9, displaying announcements for currency recharge six to nine.
2. Select from the **Recharge option six** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have six recharge options.

   This will include the announcements set from **Five options and on**.
3. Select from the **Recharge options 6-7** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have seven recharge options.

   This will include the announcements set from **Five options and on**.
4. Select from the **Recharge options 6-8** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have eight recharge options.

   This will include the announcements set from **Five options and on**.
5. Select from the **Recharge options 6-9** section:
   - The Announcement Set from the **Set** drop down box
   - The Announcement Entry from the **Entry** drop down box that is to be played to a caller if they have nine recharge options.

This will include the announcements set from **Five options and on**.

6. Click **Save**.

Editing a currency

Follow these steps to edit the details of an existing Currency record.

To configure a Currency as a Default Currency for the system, configure the Currency here, and then set it as the default in the Global Configuration screen.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record o edit from the **Currency** tab table.
3. Click **Edit**.

   Result: The Edit Currency screen displays, showing the Currency options.
4. Edit the currency details as described in Currency details.

   Warning: You cannot change the **Base** once set.
5. Click **Save**.

Related topic

Currency

Deleting a currency

Follow these steps to delete an existing currency configuration record.

To remove a currency as a default currency for the system, see the Global Configuration screen.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to delete from the **Currency** tab table.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and the Currency prompt displays.
5. Click **OK**.

Related topic

Currency

Global Configuration

You set the following global configuration on the **Global Configuration** tab in the Service Management window:

- The system currency. The required currency must have already been added to the system using the procedures in Currency.

- The mapping of languages that the system currency is announced in. See Adding or editing a language map and Deleting a language map.
- Whether EDR auditing is required. See EDR Auditing and Reporting for more information.
- The global masking configuration for displaying EDR fields in the EDR Viewer. See Editing a masking rule for more information.

You set the following global maximums on the **Global Configuration** tab:

- Credit cards per subscriber
- Subscribers per credit card

For details, see Setting global credit card maximums.

Topics:

Adding or editing a language map

Deleting a language map

EDR Auditing and Reporting

Setting global credit card maximums

Editing EDR Viewer Display Masking

Adding or editing a language map

Language maps determine what language the system currency is announced in.

Follow these steps to add a new, or edit an existing language map.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Global Configuration** tab, click **Edit**.

   Result: You see the Edit Global Configuration screen.
3. Select the Language Menu Option Mapping option.

   Result: The screen displays the Language menu option mapping section.
4. To add a new mapping:
   - Click **Insert**

   To edit an existing mapping:
   - Select the **Language** item to change from the table
   - Click **Edit**

   Result: You see the Edit/Insert screen.
5. Select the **Language** from the drop down list.
6. For a new mapping, enter the key mapping number in the **Key Mapping** field.

   Warning: This cannot be changed once saved.
7. Click **Save** to update the table.
8. Click **Save** to the details to the database.

Related topic

Global Configuration

Deleting a language map

Follow these steps to delete a language map.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Global Configuration** tab, click **Edit**.

   Result: You see the Edit Global Configuration screen.
3. Select the Language Menu Option Mapping option.

   Result: The screen displays the Language menu option mapping section.
4. Select the **Language** item to delete from the table.
5. Click **Delete**.
6. Click **Save** to the details to the database.

Related topic

Global Configuration

EDR Auditing and Reporting

The EDR auditing feature keeps track of changes to subscriber data. When EDR auditing is enabled, a user who is updating a subscriber record is forced to enter a reason in a special **Change Reason** dialog box each time they change the financial status of a subscriber; for example, when:

- Updating a subscriber's wallets
- Updating a subscriber's credit cards

The reason for the change, and the user who made the change are reported in the **Change Reason**, and **Operator Name** fields in the VWS EDR. You can view this information by displaying the VWS EDR in the EDR Viewer.

To enable EDR auditing, select the **EDR Auditing Required** check box in the **Edit Global Configuration** dialog.

Note: The EDR Auditing Required profile field in the CCS global profile block is set to true when you enable EDR auditing. For more information about the CCS global profile block, see *CCS Technical Guide*.

Setting global credit card maximums

Follow these steps to set the global maximum number of credit cards per subscriber and subscribers per credit card.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Global Configuration** tab, click **Edit**.

   The Edit Global Configuration screen displays.

3. Select the Credit Cards option.The screen displays the Credit Cards option, limits section.
4. In the fields, select the maximum:
   - Credit cards per subscriber
   - Subscribers per credit card
5. Click **Save** to save the details to the database.

Note: You can also set credit card maximums per service provider on the **Resource Limits** tab in the Service Management window. The maximums you set for a service provider override the global credit card maximums.

Related topic

Global Configuration

Editing EDR Viewer Display Masking

The EDR Viewer Display Masking option allows you to globally configure the masking rules that should be applied to EDR fields for which masking is specified. See EDR Elements tab for more information about specifying which EDR fields require masking.

Follow these steps to edit the options for EDR Viewer Display Masking.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Global Configuration** tab, click **Edit**.

   Result: You see the Edit Global Configuration screen.
3. On the Edit Global Configuration screen, select **EDR Viewer Display Masking**.

   Result: You see the EDR Viewer Display Masking configuration options.
4. Select the masking options you want to use, or select No Masking if you do not want to apply masking to EDR fields.
5. If you selected the Last Characters masking option, then enter the number of characters at the end of the EDR field to mask in the **Last Characters** field.
6. If you selected the Regular Expression masking option then perform the following steps:
   a. Enter the regular expression to use to match the characters to be masked in the **Pattern** field.
   b. Enter the characters to use as replacements in the **Replacement** field.
7. Click **Save** to save the masking rule.

Exchange Rates

The **Exchange Rates** tab allows you to view, add, edit and delete the Exchange Rates that are available in the system.

Account balances are stored in the System Currency, then converted to the user's selected Currency by the indirect rate of exchange set in this tab.

Topics:

Adding an exchange rate

Editing an exchange rate

Deleting exchange rates

Adding an exchange rate

Follow these steps to add a new Exchange Rate record.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Exchange Rates** tab, click **New**.

   Result: The New Exchange Rate screen appears with the default System Currency displayed in the **System Currency** field.
3. Select the Currency to convert the System Currency to from the **Currency** drop down box. The list will display all available Currencies that are set up on the **Currency** tab.
4. Type the value which the System Currency will be multiplied by to establish the Currency value in the **Indirect Rate of Exchange** field.

   The indirect rate of exchange is the value of 1 unit of System Currency in the selected Currency.

   Example: If the Indirect Rate of Exchange is set to 4, 1 unit of the System Currency will result in 4 of the configured Currency units. Consequently if an Account Balance is 100 Zloty, and the Exchange Rate to Euros is set at 0.22, the Account Balance will be converted to 22 Euros.
5. Click **Save**.

Related topic

Exchange Rates

Editing an exchange rate

Follow these steps to edit an existing Exchange Rate.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Exchange Rates** tab, select the Exchange Rate to edit.
3. Click **Edit**.

   Result: The Edit Exchange Rate screen appears.
4. Enter the value which the System Currency will be multiplied by to establish the Currency value in the **Indirect Rate of Exchange** field.

   The indirect rate of exchange is the value of 1 unit of System Currency in the selected Currency.

   Example: If the Indirect Rate of Exchange is set to 4, 1 unit of the System Currency will result in 4 of the configured Currency units. Consequently if an Account Balance is 100 Zloty, and the Exchange Rate to Euros is set at 0.22, the Account Balance will be converted to 22 Euros.
5. Click **Save**.

Related topic

Exchange Rates

Deleting exchange rates

Follow these steps to delete an existing Exchange Rate record.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Exchange Rates** tab, select the Exchange Rate to delete.
3. Click **Delete**.

   Result: The Delete Confirmation prompt appears.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Exchange Rate successfully deleted message.
5. Click **OK**.

Related topic

Exchange Rates

Resource Limits

The Resource Limits screens enable the service provider's resource limits to be specified. These limits prevent a service provider from using more than the specified number of:

- Product types
- Voucher types
- Rate tables

All configuration options must be completed to finalize a resource limit; however the configuration can be saved at any point by clicking **Save**.

Notes:

- All service providers must have resource limits configured for them.
- Resource limits can only be set for existing service providers. Service providers are added as ACS customers in the ACS Customers screen. For more information about adding new service providers, see *ACS User's Guide*.

Topics:

Resource Limits tab fields

Configuration options summary

Editing resource limits

Limits

Business Prefix

Sets

Call Barring

Number Translations

Bypass Numbers

Bypass Number Discount

Profile Group Limitations

Promotions

Editing EDR Viewer Display Masking

Setting Subscriber Credit Card Limits

Deleting resource limits

Resource Limits tab fields

The **Resource Limits** tab contains display-only fields, showing the limits and the current usage of the resource. The following table shows where you set the value in each limit field.

Field	Where Set
Maximum Product Types Maximum Voucher Types Maximum Rate Tables Grace Period (seconds) Maximum Bad PIN Count	Edit Resource Limits screen, Limits option.
Number of Product Types Used	Subscriber Management screen, **Product Type** tab.
Number of Voucher Types Used	Voucher Management screen, **Voucher Types** tab. For more information about the Voucher Types tab, see Voucher Type.
Number of Rate Tables Used	Rating Management screen, **Rate Tables** tab.
Number of Promotion Notifications Sent	Subscriber Management, Adding Product Types screen, Activation Credits option.
Number of Promotion SMSs Sent	Displays number of promotion SMS messages that have been sent.
Global Business Prefix Account Number Prefix	Edit Resource Limits screen, Business Prefix option.
EDR Viewer Display Masking Last Characters Pattern Replacement	Edit Resource Limits screen, EDR Viewer Display Masking. See Editing EDR Viewer Display Masking.
Maximum Credit Cards Per Subscriber Maximum Subscribers Per Credit Card	Edit Resource Limits screen, Setting Subscriber Credit Card Limits option.

Configuration options summary

This table lists all the resource limits configuration options and their functionality.

Note: The service provider is also known as the customer in ACS.

Option	Description
Limits	Sets the resource limits for a service provider that prevent the service provider from using more than the specified number of product types, voucher types and rate tables.
Business Prefix	Sets: • The global business prefix that a subscriber enters at the beginning of a dialed telephone number to ensure that the call charge is logged against the primary business wallet of their account • The account number prefix for a service provider. When you create a new subscriber, the first two digits of the subscriber card number are automatically set to the specified account number prefix. You must specify a unique value in the range of 10 to 99, or leave blank if you do not want to use a specified account number prefix.
Sets	Sets which public resource sets are available to a service provider.
Call Barring	Sets the numbers that are allowed or barred at service provider level.
Number Translations	Sets number translation mappings for the service provider, and displays them in the Short Codes list. The service short codes are mapped to termination numbers. When the short code is dialed, the call is routed to the termination number.
Bypass Numbers	Sets the bypass numbers that are allowed or barred at service provider level. A bypass number is a number that has a discount applied to it. The discount that applies to bypass numbers is set in the Bypass Discount panel.
Bypass Number Discounts	Sets the allowed bypass number discounts. To use this feature you must include the Set Discount feature node in the control plan. For more information, see the *Feature Nodes Reference Guide*.
Profile Group Limitations	Sets default limits for LNSTRING and LOPREFIX profile group fields. The limits set for the product type will override the limits set here. For more information about setting product type limits, see Subscriber Profile Limitations.
Promotions	Lists the global limited liability status for all the available promotions for the service provider. You configure promotions in Promotion Manager.
EDR Viewer Display Masking	Defines the masking rules that apply on a service provider basis when you display EDRs in the EDR Viewer. You set whether to apply the masking rules to an individual EDR tag in the EDR tag configuration. For more information, see EDR Management.

Option	Description
Credit Cards	Sets the maximum number of credit cards per subscriber and maximum number of subscribers per credit card at a service provider level.

For information on setting each resource limit, see Editing resource limits.

Editing resource limits

Follow these steps to edit an existing resource limit.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Click **Edit** on the **Resource Limits** tab.

   The Edit Resource Limits screen displays.
3. Select the required options and edit the details of the record. See:
   - Limits
   - Business Prefix
   - Sets
   - Call Barring
   - Number Translations
   - Bypass Numbers
   - Bypass Number Discount
   - Profile Group Limitations
   - Promotions
   - Editing EDR Viewer Display Masking
   - Setting Subscriber Credit Card Limits
4. Click **Save**.

Related topic

Resource Limits

Limits

Follow these steps to add limits to Resource Limits for a service provider.

1. Select the customer from the **Service Provider** drop down box.
2. From the **Resource Limits** tab of the Resources screen, click **Edit**.

   The configurable limits display in the Edit Resource Limits screen. For more information, see Resource Limits tab fields.
3. In the relevant fields, set the maximum number of the following resources that the service provider may use:
   - Product types

- Voucher types
- Rate tables

Tip: It is not possible to set the resources allowed to a value lower than the number of resources already used, as displayed on the **Resource Limits** tab. To reduce the numbers that the service provider may use in the case where the maximum number has been reached, you must first reduce the number that the service provider uses.

4. In the **Grace Period (seconds)** field, type the period of time (in seconds) to elapse before a call begins to be charged. If a call ends before the grace period has been reached, the call is free.

   If a call continues beyond the grace period, the whole call incurs a charge, including the grace period. The grace period applies on a per customer basis.

5. Set the maximum number of times that an invalid PIN may be entered into the system in the **Maximum Bad PIN Count** field. If a customer exceeds this number of attempts in a 24 hour period, their account is frozen.

6. Click **Save**.

Related topic

Resource Limits

Business Prefix

Follow these steps to configure the Global Business Prefix number for the service provider.

1. Select **Business Prefix** in the left hand menu in the Edit Resource Limits screen.

   The Business Prefix option fields display.

2. (Optional) Specify the global business prefix by entering the digits and special characters for the prefix in the **Global Business Prefix** field. You can include any of the following allowed values in the prefix: 0-9, #, and *.

   The subscriber must enter this prefix at the beginning of a dialed telephone number to enable the call to be charged to their business wallet instead of their personal wallet.

   You must include the Business Prefix Branch feature node in the control plan to enable the global business prefix feature. For more information about control plans, see the *CPE User's Guide*. For more information about the Business Prefix Branch feature node, see *Feature Nodes Reference Guide*.

3. (Optional) Specify the prefix that will be prepended to a subsriber's card ID by entering the two digit prefix in the **Account Number Prefix** field. Specify a value between 10 and 99 that is unique to this service provider, or leave blank if you do not want to use account number prefixes.

4. Click **Save**.

Related topic

Resource Limits

Sets

Follow these steps to configure private reusable data set limits for service providers.

1. Select the **Sets** option from the left hand menu in the Edit Resource Limits screen.

The Sets option displays, and shows a list of all the public data sets.

2. In the **Allocation Public Geography Sets** section, select the check box for each geography set that you want to make available to the service provider.

   You create geography sets on the **Geography** tab of the ACS Configuration screen.

3. In the **Allocate Public Announcement Sets** section, select the check box for each announcement set that you want to make available to the service provider.

   You create announcement on the **Announcements** tab of the ACS Configuration screen.

4. In the **Allocate Public Holiday Sets** section select the check box for each holiday set that you want to make available to the service provider.

   You create holiday sets on the **Holidays** tab of the ACS Configuration screen.

5. Click **Save**.

   For more information about the ACS Configuration screen, see *ACS User's Guide*.

Related topic

Resource Limits

Call Barring

This manages allowed/ barred lists for service providers.

Allowed/barred lists can also be set at these levels:

- System-wide
- Product type (see the New or the Edit Product Type screen Call Barring option)
- Subscriber account (see the New or the Edit Subscriber screen, Call Barring option)

Follow these steps to configure call barring for customers.

1. Select the **Call Barring** option from the left hand menu in the Edit Resource Limits screen.

   The Call Barring option displays, showing the Allowed/Barred List configuration for the service provider.

2. Select whether the listed numbers will be allowed or barred from the **List Type** drop down list in the **Service Allowed/Barred List** section.

   Note: All numbers in the list are allowed, or all numbers are barred, according to the list type. It is not possible to have some allowed and some barred numbers in the list.

3. Select the **Ignore** check box if you want the service to ignore the allowed/barred list.

4. Edit the number list in the **Service Provider Allowed/Barred List** section. To:

   - Add numbers to the list:
     - In the **New Number** field, enter the number
     - Click **Add**.

- Delete numbers from the list:
  - Select the number in the **Number List** field
  - Click **Delete**.

5. If required, repeat step 4 until the number list is complete.
6. Click **Save**.

Related topic

Resource Limits

Number Translations

This manages number translation lists for service providers.

You can also set number translations at these levels:

- Global
- Product type
- Subscriber account

Follow these steps to configure the number translation list limits for the service provider.

1. Select the **Number Translations** option from the left hand menu in the Edit Resource Limits screen.

   The Number Translations option displays, listing the configured short codes.
2. Edit the number list in the **Short Codes** section.

   To add a number to the list:

   a. In the **In** field, enter the service short code to translate.

   b. In the **Out** field, enter the termination number that the short service code translates to.

   c. Click **Add**.

   To delete a number from the list:

   a. Select the number in the **Number List** table.

   b. Click **Delete**.
3. Repeat step 2 until all the codes are included.
4. Click **Save**.

Related topic

Resource Limits

Bypass Numbers

Follow these steps to configure the bypass numbers at a service provider level.

Tip: Bypass Numbers can also be configured at the following levels:

- Global
- Product type

1. Select the **Bypass Numbers** option from the left hand menu in the Edit Resource Limits screen.

   The Bypass Numbers option displays, showing the bypass numbers configuration for the service provider.

2. Select the **List Type** from drop down box in the **Service Provider Bypass Numbers** section.

   Note: The list type determines whether the listed bypass numbers are all barred, or all allowed.

3. Select the **Ignore** check box if the service is to ignore the number list.

4. Edit the number list in the **Service Provider Bypass Numbers** section.

   To add a number to the list:

   a. Enter a bypass number in the **New Number** field

   b. Click **Add**.

   To delete a number from the list:

   a. Select the number from the **Number List**

   b. Click **Delete**.

5. Repeat step 4 until the number list is complete.

6. Click **Save**.

Related topic

Resource Limits

Bypass Number Discount

Follow these steps to configure the limits for bypass number discounts.

Tip: To enable bypass number discounts limits, you must include the Set Discount feature node in the control plan. For more information about the Set Discount feature node, see *Feature Nodes Reference Guide*.

1. Select the **Bypass Number Discount** option from the left hand menu in the Edit Resource Limits screen.

   The Bypass Number Discount option displays, showing the bypass number discount configuration for the service provider.

2. Select the currency code in which the **Max. Charge** field will be displayed from the **Display Currency** list.

3. Type the percentage discount to apply during the first discount period in the **Period One %** field.

4. Type the percentage discount to apply during the second discount period in the **Period Two %** field.

5. Type the maximum total charge to charge the subscriber for any one call in the **Max. Charge** field.

6. Click **Save**.

Related topic

Resource Limits

Profile Group Limitations

Follow these steps to configure the service provider-level limits for LNSTRING and LOPREFIX profile field types.

Tip: You can override the limits set here by setting the profile field type limits for the product type.

1. Open the **Profile Group Limitations** group in the Edit Resource Limits screen, and select the profile field that you want to set limits for.

   The Profile Group Limitations option displays the configuration for the selected field.
2. Select the **Ignore Limitations** check box if required:
   - When selected, the limits are ignored and the system default resource limits are used.
   - When not selected, the limits set here are used.
3. In the **Max Number of Entries field**, if present, type the maximum number of prefixes that may be included in the Number List. Defaults to 100 if no value is specified.

   Note: This field is only available for LOPREFIX type fields.
4. In the **Min Number Length** field type the minimum numeric value for the Profile Group Field. Defaults to zero if no value is specified.
5. In the **Max Number Length** field type the maximum numeric value for the profile group field. Defaults to 255 if no value is specified.
6. Select the **Limitation Prefix Tree Type** from the drop down list. If you select:
   - Allowed – The profile group field value must match an entry in the Number List.
   - Barred – The profile group field value must not match an entry in the Number List.
7. Edit the **Number List**.

   To add a number to the list:

   a. Enter a required number in the **New Number** field.

   b. Click **Add**.

   To delete a number from the list:

   a. Select the number from the **Number List**, select the number.

   b. Click **Delete**.
8. Repeat step 7 until the number list is complete.
9. Click **Save**.

Related topic

Resource Limits

Promotions

Follow these steps to view the global limited liability status of the promotions defined for the currently selected service provider.

1. Select the **Promotions** option from the left hand menu in the Edit Resource Limits screen.

   The Promotions option displays, listing the promotions for the current service provider.

2. Click **Save**.

Related topic

Resource Limits

Editing EDR Viewer Display Masking

The EDR Viewer Display Masking option allows you to set rules on a service provider basis pertaining to masking EDR fields in the EDR Viewer. See EDR Elements tab for information about specifying which EDR fields require masking.

Follow these steps to edit the options for EDR Viewer Display Masking

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Resource Limits** tab, click **Edit**.

   Result: The Edit Resource Limits screen displays.

3. Select **EDR Viewer Display Masking**.

   Result: The EDR Viewer Display Masking screen configuration options display in the Edit Resource Limits screen.

4. Select the masking option you want, or select Global Masking to apply the global masking rules set on the Global Configuration tab.
5. Click **Save** to save the masking limits.

Setting Subscriber Credit Card Limits

To set the maximum number of credit cards per subscriber and the maximum subscribers per credit card for the service provider:

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the **Resource Limits** tab, click **Edit**.

   The Edit Resource Limits screen displays.

3. Select the **Credit Cards** option.
4. Set the required maximums for the selected service provider in the following fields:
   - **Maximum Credit Cards Per Subscriber**
   - **Maximum Subscribers Per Credit Card**

   Note: The maximums you set for a service provider override the global credit card maximums. See Setting global credit card maximums.

5. Click **Save** to save the details to the database.

Related topic

Resource Limits

Deleting resource limits

Customers must have resource limits. You can only change the values, not delete them.

Related topic

Resource Limits

Barred List

The **Barred List** tab enables you to view, add or delete numbers that are either allowed or barred from use.

This list manages allowed/ barred lists system wide.

You can also set barred allowed lists at these levels:

- Service provider
- Product type. See Call Barring.

Topics:

Adding numbers to the barred list

Adding numbers to the barred list

Follow these steps to edit the service allowed/barred numbers list.

1. From the **Barred List** tab, click **Edit**.

   Result: You see the Edit Service Allowed/Barred Numbers List screen.
2. In the **Service Allowed/Barred List** section, select the **List Type** from the drop down list. This determines whether the listed numbers will be allowed or barred.

   Note: All numbers in the list are allowed, or all numbers are barred, according to the list type. It is not possible to have some allowed and some barred numbers in the list.
3. If you want the service to ignore the allowed/barred list, select the **Ignore** check box.
4. To edit the **Number List**:
   - Add a number:
     - Enter the number to add in the **New Number** field
     - Click **Add**
   - Delete a number:
     - Select the number to remove from the list
     - Click **Delete**
5. If required, repeat step 4 until all the numbers are listed.
6. Click **Save**.

Related topic

Barred List

Capability

The **Capability** tab allows you to define global capabilities. You can specify the default control plan for the capability, the service trigger, called party number, and the EDR type to output.

Capabilities are associated with control plans in the Product Type screen. See Control Plans.

The default capabilities are VOICE_MO (originating) and VOICE_MT (terminating).

Topics:

Capability fields

Adding a capability

Editing a capability

Deleting balance type mapping

Capability fields

This table describes the function of each field.

Field	Description
Name	The name given to this capability definition. The name is used as the identifier in the Control Plans option in the Product Type screen.
Service	The service name that triggers this capability. Service names are defined in **/IN/service_packages/ACS/etc/acs.conf** For more information about configuring service names, see *ACS Technical Guide*.
CdPN (Called Party Number on New and Edit screens)	The called party number used when matching the capability definition. (Optional.)
Default Control Plan	The default control plan invoked by this capability definition. The default control plan is run when the calling party number is not a known subscriber. The control plan drop down list displays all the control plans a subscriber can use. **Tip:** This list can be shortened by using the **Search By** field and then **Search**.

Field	Description
Search By	Use initial characters of the control plan name or combine with % (match on any number of characters), or _ (match on a single character). **Examples:** Search for `e%SMS` will find all control plan names beginning with e and containing SMS. Search for `e_han%SMS` will find all control plan names beginning with e, containing the string han in positions 3 to 5, and containing SMS. The list can be further restricted by entering a maximum number of names to show in the **Max Rows** field.
Statistics Category	In license reports, calls on this capability will be reported against the service specified in this field. For more information about License reports, see License.
Statistics Protocol	In license reports, calls on this capability will be reported against the protocol specified in this field.
Bearer Capability	The bearer capability (InitialDP itc field (information transfer capability)) used when matching the capability definition. (Optional.)
CDR Type	The regular call EDR type to use for the capability.
In-Session Notifications	You can select an in-session notifications trigger for the call capability, if required. The trigger defines the control plan to invoke, and the associated session data to pass to it to handle in-session notifications reported by the charging system.

Adding a capability

Follow these steps to add a new Capability definition.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Capability** tab, click **New**.

   Result: You see the New Capability screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Capability fields.
4. Click **Save**.

   Warning: You must restart the SLEE in order for the changes to take effect. For more information about restarting the SLEE, see *SLEE Technical Guide*.

Related topic

Capability

Editing a capability

Follow these steps to edit a Capability definition.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On table on the **Capability** tab select the record to edit and click **Edit**.

   Result: You see the Edit Capability screen.
3. Edit the fields to reflect the required changes.

   For more information about the fields on this screen, see Capability fields.
4. Click **Save**.

   Warning: The SLEE will need to be restarted in order for the changes to take effect.

Related topic

Capability

Deleting a capability

Follow these steps to delete an existing Capability definition.

Warning: Caution should be used when deleting existing capabilities as the system may become unstable if a capability is deleted that is used by a configured service, such as CCS_BPL.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to delete from the table on the **Capability** tab.
3. Click **Delete**.

   Result: The Delete Confirmation displays.
4. Click **OK**.

   Results:

   - The record is deleted from the database.
   - The Capability confirmation prompt displays.
5. Click **OK**.

   Warning: The SLEE will need to be restarted in order for the changes to take effect.

Related topic

Capability

Number Translation List

The **Number Translation List** tab enables you to view, add, edit and delete the service short codes that are mapped to specific termination numbers within the CCS service.

In this tab, the numbers which are displayed in the **In** column are service short codes which are mapped to the termination numbers displayed in the **Out** column. Incoming calls use the service short codes, which are then routed to the outgoing termination numbers.

This manages number translation lists system-wide.

The translation list exists at three other levels, in the order they are set. These are:

- Level 1 Service Provider
- Level 2 Product Type
- Level 3 Subscriber account Level

These are checked in the order they are placed in the control plan.

Topics:

Editing numbers in the translation list

Editing numbers in the translation list

Follow these steps to edit the numbers on the Number Translation List.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. From the **Number Translation List** tab, click **Edit**.

   Result: You see the Edit Service Short Codes/Number Translation List screen.
3. In the **Service Short Codes** section, edit the Number List as required. To:
   - Add a number pair:
     - In the **In** field, enter the service short code you want to map to a termination number
     - In the **Out** field, enter the termination number you want to translate the short service code to
     - Click **Add**
   - Delete a number pair:
     - In the Number List table, select the number
     - Click **Delete**.
4. If required, repeat step 3 to add/delete more numbers in the Number List.
5. Click **Save**.

Related topic

Number Translation List

MFile Generation

MFiles are used to store data which is not changed very often (for example, tariffs). MFiles are compiled on the Voucher and Wallet Server nodes to provide a fast lookup for a subset of the data in the E2BE database. You can generate a separate CCS Rating MFile and CCS Product Catalogue MFile for each service provider. This enables you to manage MFiles separately for each service provider. You generate MFiles from the **MFile Generation** tab.

Note: All the relevant tariff information must be established before the **MFile Generation** tab is available.

For more information about MFiles, see *VWS Technical Guide*.

Topics:

MFile distribution process

MFile Fields

Adding an MFile

Editing an MFile

Deleting an MFile

MFile distribution process

This topic describes the MFile distribution process.

1. Through the New or Edit MFile Generation screen, the administrator updates the details contained in the MFile and clicks **Save**.

   Result: The data and an update request are transferred to the VWS nodes.
2. When the update request arrives on the VWS, **ccsMFileCompiler**:
3. Creates a new MFile from the updated data in the E2BE database
4. Sends a request to the beServer to reload the MFile
5. Then **ccsMFileLoader**:
6. Reloads the new MFile
7. Updates the E2BE database to indicate that the new MFile has been reloaded

MFile Fields

This table describes the function of each field.

Field	Description
Domain	The Voucher and Wallet Server pair you will send the MFile to. This field is populated by the **Domain** tab. This field cannot be edited once it is initially saved.
Description	The description of the MFile.
Request Date	The date the MFile was last requested to run. **Note:** This field is only available on the Edit MFile screen.
Type	Whether the MFile is for: • Rating • Named event catalogue

Adding an MFile

Follow these steps to add a new MFile for a selected service provider.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. From the **MFile Generation** tab, click **New**.

   Result: You see the New MFile Configuration screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see MFile Fields.
4. Click **Save**.

   Result: ccsMFileCompiler on the VWS nodes within the chosen domain builds up a new MFile and notifes the VWS processes.

Related topic

MFile Generation

Editing an MFile

Follow these steps to edit an existing MFile generation record.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the table on the **MFile Generation** tab, select the MFile generation record to edit.
3. Click **Edit**.

   Result: You see the Edit MFile Configuration screen.
4. In the **Description** field, update the description of the MFile.

   For more information about the fields in this screen, see MFile Fields.
5. Click **Save**.

Related topic

MFile Generation

Deleting an MFile

Follow these steps to delete an existing MFile generation record.

Note: There must be a current MFile when the Voucher and Wallet Servers are restarted.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the table on the **MFile Generation** tab, select the MFile to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

Result: You see the MFiles confirmed delete prompt.

5. Click **OK**.

Related topic

MFile Generation

Balance Type Mapping

The **Balance Type Mapping** tab is used for:

- Mapping third-party balance types to NCC balance types (for example, from ECE balance types to NCC balance types)
- Filtering wallet recharges for wallets distributed across a third-party charging domain and a VWS tracking domain

Balance type mapping allows the feature nodes that operate against Balance Types to function for third-party balance types as well as those on the VWS.

Note: If balance type mapping is not defined for a Balance Type, wallet recharges are sent to the VWS by default.

Topics:

Balance type mapping fields

Scenarios

Adding balance type mapping

Editing balance type mapping

Deleting balance type mapping

Balance type mapping fields

This table describes the function of each field.

Field	Description
Balance Type	List of available balance types. This list is restricted to chargeable balance types. When you select None, NCC uses the balance type mapping configuration for filtering wallet recharges through the charging and/or tracking domain. See Scenarios.
Third-Party Resource	The third-party balance ID to map to the NCC balance type. This text field accepts letters, digits, and spaces.

Field	Description
Third-Party Resource Scale	The scaling factor for converting balance values between NCC balance types and third-party balance types. For example, if NCC uses hundredths of seconds for time balances, but the BRM equivalent uses seconds, the scaling factor converts the BRM seconds to the NCC hundredths of seconds. **Note:** This field accepts: • Positive and negative numbers. A negative number means to apply sign inversion to the calculated value. • Number values up to 10000. • Numbers with up to 5 decimal places.
Domain Type	List of available non-VWS domain types. This field associates the balance type mapping configuration with the specified domain.

Scenarios

This table describes the results of voucher redemptions in different balance type mapping scenarios.

Voucher Type	Result
Subscriber applies a split domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a balance type that has balances defined in both domains: When the voucher is applied to the subscriber's wallet, the balances in both domains are modified at the same time.
Subscriber applies a VWS domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a voucher that has balances only in the VWS domain: When the voucher is applied to the subscriber's wallet, only balances in the VWS domain are modified.
typeSubscriber applies BCD domain voucher type	Given a subscriber who has a wallet in both the VWS and BCD domains and a voucher type that has balances in the BCD wallet domain: When the voucher is applied to the subscriber's wallet, only the balances in the BCD domain are modified.

This table describes the results of actions by a screen user who wants to associate a chargeable balance type with a domain.

Scenario	Result
Create a new mapping between a chargeable balance type and a domain	When the user selects a chargeable balance type and a domain type and clicks the **Save** button, the balance type will be associated with the domain type.
Creating a new mapping between a chargeable balance type and a non-VWS domain	When the user selects a chargeable balance type and a non-VWS domain and clicks the **Save** button, the balance type will be associated with the domain type.

Adding balance type mapping

Follow these steps to add a new balance type mapping.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Balance Type Mapping** tab, click **New**.

   Result: You see the New Balance Type Mapping Configuration screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about these fields, see Balance type mapping fields.
4. Click **Save**.

Related topic

Balance Type Mapping

Editing balance type mapping

Follow these steps to edit an existing balance type mapping.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to edit from the table on the **Balance Type Mapping** tab.
3. Click **Edit**.

   Result: You see the Edit Balance Type Mapping Configuration screen.
4. Edit the fields to reflect the required changes.

   For more information about this screen, see Balance type mapping fields.
5. Click **Save**.

Related topic

Balance Type Mapping

Deleting balance type mapping

Follow these steps to delete an existing balance type mapping.

1. Select the service provider from the **Service Provider** list in the Service Management screen.

2. Select the record to delete from the table on the **Balance Type Mapping** tab.
3. Click **Delete**.

   Result: The Delete Confirmation displays.
4. Click **OK**.

Related topic

Balance Type Mapping

Security

The **Security** tab allows you to configure the security for vouchers and credit cards.

Please select which security function you wish to view the help for.

Select from:

- About Voucher Security
- About Credit Card Security

About Voucher Security

Authentication rules are used to ensure voucher security. Authentication rules must be created before they can be used for voucher batches.

For more information about vouchers, see *Voucher Manager User's Guide*.

The CB-10 voucher security features enable you to define authentication rules for CB-10 HRN SHA256, CB-10 HRN SHA512 and CB-10 HRN AES256 encryptions. Specify the encryption method when creating voucher batches and redeeming vouchers.

Ensure the following are installed and activated on your system to be visible on your screens:

- CB-10 voucher security features
- CB10 HRN SHA256 authentication module
- CB10 HRN SHA512 authentication module
- CB10 HRN AES256 authentication module

Note: CB-10 voucher security will only be available to you if you have an appropriate license. For more information about activation, see *CCS Installation and Removal Guide*.

Security fields

This table describes the function of each field.

Note: The S, R1, R2, and R3 fields apply to CB10 HRN and SDK-developed PAMs only and will only be visible in the screens if the CB-10 Voucher Security features have been activated. For more information about how these fields are related to each other, and how they are used in CB-10 authentication rules, see CB-10 field relationship diagram.

Field	Description
Name	Name for the authentication rule. Maximum length 50 characters.

Field	Description
PAM	Pluggable Authentication Module name. This field is populated by the system with the PAMs which have been enabled on this platform. **Note:** • To review the licenses which have been activated on your platform, see *CCS Installation and Removal Guide*. • The full list of PAM is a combination of a fixed list of product-provided PAMs plus any SDK-developed PAMs that have been installed.
Number Length	Voucher number length. This field may only be edited for DES/DES Deprecated PAMs. See the following table for valid number lengths.
PIN Length	Voucher PIN length (digits). If the PAM is AltAuthMod then this field is automatically set to 0. For DES/DES Deprecated PAMs enter a value between 4 to 20.
Salt	This field applies to DES rule definition only. It is used to generate the voucher pin and will be automatically generated if left blank. It can be set to any 2 alpha-numeric characters. This field is not used with authentication rules that specify a CB10 HRN or SDK-developed PAM.
S	Length of the serial number (the number must be between 0 and 20).
R1	Length of the first redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.
R2	Length of the second redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.
R3	Length of the third redundancy layer (must be set to 0, 1 or 2). A higher number provides a greater level of security.
SDK P1	Optional integer field that is passed as part of the Authentication Rule information given to an SDK ccsAuth plugin and can be used to supply extra parameters used when generating a secret (HRN).
SDK P2	Optional integer field that is passed as part of the Authentication Rule information given to an SDK ccsAuth plugin and can be used to supply extra parameters used when generating a secret (HRN).
SDK P3	Optional integer field that is passed as part of the Authentication Rule information given to an SDK ccsAuth plugin and can be used to supply extra parameters used when generating a secret (HRN).

Field	Description
SDK Custom Secret Length	The length of the string to produce for the final HRN. This is used when the SDK ccsAuth plugin is implementing a custom method for generating an HRN (on top of the product-provided CB10 algorithm). **Note**: It is enabled only if the plugin has been installed in the database specifying CustomHRN as Y in the database installer specification XML file.

The following table shows the valid number length values for PAMs:

PAM	Valid Values	Automatically Generated?
AltAuthMod	14	Yes
DES DES Deprecated	4 - 20	No
CB10 HRN SDK-developed	4 - 22	Yes. This field is set to: S+R1+R2+R3

Authentication rules

Authentication rules are used by the voucher batch creation and voucher redemption processes. The authentication rule associated with a voucher batch determines which encryption algorithm to use when generating the voucher numbers in the batch. Following encryption algorithms are supported:

- CB10 HRN SHA256
- CB10 HRN SHA512
- CB10 HRN AES256

Note: You cannot edit or delete an authentication rule that is used to create a voucher batch. Voucher batches created in previous versions of the product can continue to use the old rules they were created with. Old authentication rules are not available for new voucher batches.

CB-10 HRN Creation

The CB10 HRN creation provided by the CB10 HRN authentication module generates voucher numbers using the:

- CB-10 HRN private keys (K1, K2 and K3) for the service provider
- S, R1, R2 and R3 security parameters defined for the authentication rule

The CB-10 HRN creation algorithm does not support voucher PINs and therefore the PIN length is always set to 0.

A unique set of CB-10 HRN private keys (K1, K2 and K3) is required for each service provider. These keys are generated in one of the following ways:

- Generated automatically when a new service provider is created
- Generated or regenerated for service providers who existed before the CB-10 HRN authentication was activated using the **Generate** button for one of the CB10 HRN SHA or AES PAM modules

Note: If a voucher batch is already created for a service provider using the CB-10 creation algorithm then you cannot:

- Regenerate the K1, K2, and K3 private keys for the selected service provider
- Edit the associated authentication rule

CB-10 HRN SHA Hashing

CB-10 HRN private keys are created when:

- a new service provider is created
- a **Generate** button is clicked for a CB10 or SDK PAM Authentication module and the service provider does not have any CB-10 vouchers created yet

Clicking a **Generate** button also generates hash/encryption keys for the specific PAM Authentication module that are used for hashing/encrypting the CB10 or SDK-created HRN. **Generate** buttons are disabled if the service provider already has a voucher batch created using the specific PAM Authentication module.

For example, after a voucher batch is created for a service provider using an authentication rule specifying a PAM of CB10 HRN SHA256, you cannot change or update the hash key for CB10 HRN SHA256.

PAMs that use SHA hashing can specify the number of hash iterations to apply, the default is 1 iteration.

Decryption to retrieve the HRN is not supported for SHA-based PAMs as the SHA operation is not reversible.

CB-10 HRN AES Encryption

Similar to CB-10 HRN SHA hashing, AES encryption keys are created when the **Generate** button for the CB10 HRN AES256 PAM or a SDK-developed PAM using AES Encryption is clicked.

Once a service provider has a voucher batch created with Authentication Rules using the PAM, the Generate button for the PAM is no longer enabled.

PAMs that use AES encryption do not use iterations and in this case the **Iterations** field for the Authentication Rule is set to 1.

Because AES-256 is a symmetric encryption algorithm, its encrypted value can be decrypted. If the capability of decrypting voucher private secrets is required those vouchers must be created using an Authentication rule that specifies either a PAM of CB10 HRN AES256 or an SDK-developed PAM that supports decryption.

Generating CB-10 HRN keys and SHA/AES hash/encryption keys

Follow these steps to generate or regenerate CB-10 HRNGEN private keys, SHA hash keys and AES keys for a service provider.

1. Select the customer from the **Service Provider** drop down box.
2. On the **Security** tab, click **Generate** for one of the following:
   - CB10 HRN SHA256 Key Generation
   - CB10 HRN SHA512 Key Generation
   - CB10 HRN AES256 Key Generation
   - SDK `Display Name` Key Generation
3. **Note:**`Display Name` is the chosen name for a PAM plugin developed with the SDK. The buttons are visible on the tab if the CB-10 Voucher Security features are activated. **Generate** buttons are disabled if a voucher is already created for the service provider using the associated voucher authentication PAM module.

   Result: You see the appropriate Key Generation completed message box appear.
4. Click **OK**.

Rule priority

When redeeming vouchers the different encryption algorithms are matched against the voucher HRN (hidden resource number) based on the length of the HRN. If the length of the HRN cannot be uniquely matched to an encryption algorithm, then an attempted match is made against each authentication rule in turn. The priority given to each authentication rule is determined by the order in which they appear in the table in the tab.

Changing rule priority

Follow these steps to change the order of priority for an authentication rule.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the table on the **Voucher Security** tab, select the authentication rule to move.
3. Click:
   - **Up** - to move the rule up one row and raise its priority
   - **Down** - to move the rule down one row and lower its priority
4. Click **Save**.

Adding an authentication rule

Follow these steps to add a new authentication rule.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Security** tab, select the **Voucher Security** tab, then click **New**.

   Result: You see the New Authentication Rule screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Security fields.

   Notes:

- To use the selected PAM, you must first complete key generation. See Generating CB-10 HRN keys and SHA/AES hash/encryption keys.
- Different fields will be enabled depending on which authentication module you select and in the case of an SDK-developed authentication module how that module has been configured.

4. Click **Save**.

Related topic

About Voucher Security

Editing an authentication rule

Follow these steps to edit an authentication rule.

Note: You will not be able to edit a rule for which there is an associated voucher batch.

1. Select the **Service Provider** from the drop down box.
2. Select the rule to edit from the table on the **Voucher Security** tab.
3. Click **Edit**.

   Result: You see the Edit Authentication Rule screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Security fields.

   Note: Different fields will be enabled depending on which authentication module you select.
5. Click **Save**.

Related topic

About Voucher Security

Deleting an authentication rule

Follow these steps to delete an existing authentication rule.

Note: You will not be able to delete a rule for which there is an associated voucher batch.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the table on the **Voucher Security** tab, select the authentication rule to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

Related topic

About Voucher Security

About Credit Card Security

About Masking Rules for Credit Card Security

You configure masking rules for credit card security to prevent full credit card numbers from being displayed. A global masking rule is configured at installation. You can modify the global masking rule, if required, but you cannot delete it.

You can also define masking rules for service providers. A service provider masking rule is used instead of the global masking rule. You define masking rules on the **Security** tab in the Service Management window.

Global Masking Rule

The global masking rule is configured at installation to use the following defaults:

- Four digit suffix length
- No prefix
- Star (*****) pad character to mask the credit card number display
- Allow tokenized card number searches

When displaying a credit card number, the total length of the number is 19 characters, including masked characters. For example, if the full credit card number is 4535123456789876, then the number displayed after applying the global masking rule is **********9876.

Credit card security fields

This table describes the function of each field and area.

Field	Description
Warning label	Indicates that a rule has a prefix + suffix length greater than 12.
Table	Shows the current masking rules, one per row. The table shows rules for this service provider plus the global masking rule.
Name	The generated name of the masking rule, in the format - Prefix: *value*/Suffix: *value*
Suffix Length	The number of digits displayed at the end of the display number. Valid values are numbers 1 through 10.
Prefix Length	The number of digits displayed at the start of the display number. Valid values are numbers 1 through 9. Optional, defaults to no value.
Pad Character	The pad character, which is the substitute character to display in the display number when not in the prefix or suffix. Valid values are any non-numeric character. Optional. Default is *.

Field	Description
Searchable Tokenised Number	The tokenized credit card number can be searched for the rule if a tick is displayed. You can search on the Credit Cards tab, for example. See Searching for credit cards.

Adding a masking rule

Follow these steps to add a masking rule.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On the **Security** tab, select the **Credit Card Security** tab, then click **New**.

   Result: You see the New Masking Rule screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Credit card security fields.
4. Click **Save**.

Related topic

About Credit Card Security

Editing a masking rule

Follow these steps to edit a masking rule.

1. Select the **Service Provider** from the drop down box.
2. Select the rule to edit from the table on the **Credit Card Security** tab.
3. Click **Edit**.

   Result: You see the Edit Masking Rule screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Credit card security fields.
5. Click **Save**.

Related topic

About Credit Card Security

Deleting a masking rule

Follow these steps to delete an existing masking rule.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. In the table on the **Credit Card Security** tab, select the rule to delete.
3. Click **Delete**.

Result: You see the Delete Confirmation prompt.

4. Click **OK**.

Related topic

About Credit Card Security

Splash Screen Configuration

The **Splash Screen Config** tab enables you to configure the splash screens which are displayed when a user logs into the Customer Care Portal.

Note: You can only configure one message of the day and one security warning message for a service provider. This means that you may not be able to add a splash screen configuration record, or you may not be able to change the message type of an existing message.

Splash Screen configuration fields

This table describes the function of each field.

Field	Description
Message Type	The type of splash screen message to configure. **Note:** There are only two options in this field. The system only supports one message of each type. You can only select a value in this field when no splash screen config is currently configured. Otherwise, this field will automatically be populated with the available value.
Message Text (HTML Editor)	The source html markup and text which defines the message which is displayed on the splash screen message when users log into the Customer Care Portal.

Adding splash screen configuration

Follow these steps to add a new splash screen configuration.

1. Select the **Service Provider** from the drop down box.
2. On the **Splash Screen Configuration** tab, click **New**.

   Result: You see the New Splash Screen Configuration screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Splash Screen configuration fields.
4. You can load the message from an external file. For more information, see Importing a message from file.
5. You can preview the message. For more information, see Previewing the message.
6. Click **Save**.

Related topic

Splash Screen Configuration

Importing a message from file

Follow these steps to import the source html markup and text from an external file.

Note: The Message Text (HTML Editor) does not:

- Support any non-standard HTML 3.2 constructs
- Handle any complex HTML generated by Microsoft Word.

1. On the Splash Screen Configuration screen, click **Load**.

   Result: You will see the Open screen.

2. Browse to the file which holds the html to import and select it.
3. Click **Open**.

   Result: The html from the file will be displayed in the Message Text (HTML Editor) screen.

Previewing the message

Follow these steps to view an example of how the message will look to users who are logging into the CCP.

1. To see what the splash screen will look like, click **Preview**.

   Result: The Splash Screen Configuration Preview window opens displaying the splash screen. Close the screen when you have finished checking the message.

2. When you have finished viewing the preview, close the window by clicking the **x** in the top right corner of the screen.

Editing splash screen configuration

Follow these steps to edit an existing splash screen configuration record.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. On table on the **Splash Screen Configuration** tab select the record to edit and click **Edit**.

   Result: You see the Edit Splash Screen Configuration screen.

3. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Splash Screen configuration fields.

4. You can load the new message from an external file. For more information, see Importing a message from file.
5. You can preview the message. For more information, see Previewing the message.
6. Click **Save**.

Related topic

Splash Screen Configuration

Deleting splash screen configuration

Follow these steps to delete an existing splash screen configuration.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to delete from the table on the **Splash Screen Configuration** tab.
3. Click **Delete**.

   Result: The Delete Confirmation displays.
4. Click **OK**.

   Results: The record is deleted from the database.

Related topic

Splash Screen Configuration

Channel

The **Channel** tab allows you to configure the promotion channels for the Balance Recharge event in Promotion Manager.

Security fields

This table describes the function of each field.

Note: The S, R1, R2, and R3 fields apply to CB10 HRN and SDK-developed PAMs only and will only be visible in the screens if the CB-10 Voucher Security features have been activated. For more information about how these fields are related to each other, and how they are used in CB-10 authentication rules, see CB-10 field relationship diagram.

Field	Description
Name	Name for the authentication rule. Maximum length 50 characters.
PAM	Pluggable Authentication Module name. This field is populated by the system with the PAMs which have been enabled on this platform. **Note:** • To review the licenses which have been activated on your platform, see *CCS Installation and Removal Guide*. • The full list of PAMs is a combination of fixed list of product-provided PAMs plus any SDK-developed PAMs that have been installed.
Iterations	The number of hash iterations to use for PAM of CB10 HRN SHA256 or CB10 HRN SHA512. Default is 1. Can be a positive number up to 99999. This field is used if a CB10 HRN SHA PAM is selected.

Field	Description
Number Length	Voucher number length. This field is non-editable and is calculated for a PAM of CB10 HRN SHA256 or CB10 HRN SHA512 as the sum of S+R1+R2+R3.
PIN Length	Voucher PIN length (digits). This field is available only for existing vouchers and is non-editable.
Salt	This field applies to DES rule definition only. This field is available only for existing vouchers and is non-editable.
S	Length of the serial number (the number must be between 0 and 20).
R1	Length of the first redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.
R2	Length of the second redundancy layer (must be between 0 and 20). A higher number provides a greater level of security.
R3	Length of the third redundancy layer (must be set to 0, 1 or 2). A higher number provides a greater level of security.

Channel fields

This table describes the function of each field.

Field	Description
Channel	The name of the promotional channel. The following global channels are preconfigured upon installation: • ATM • Any • MPOS • Other • Voucher
Description	A description of the channel
Global	If selected, the channel is global, rather than specific to the selected service provider.

Adding a Channel

Follow these steps to add a new channel.

1. Select the **Service Provider** from the drop down box.
2. On the **Channel** tab, click **New**.

   Result: You see the New Channel screen.
3. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Channel fields.

4. Click **Save**.

Related topic

Channel

Editing a Channel

Follow these steps to edit an existing channel.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to edit from the table on the **Channel** tab.
3. Click **Edit**.

   Result: You see the Edit Channel screen.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Channel fields.
5. Click **Save**.

Related topic

Channel

Deleting a Channel

Follow these steps to delete an existing channel.

1. Select the service provider from the **Service Provider** list in the Service Management screen.
2. Select the record to delete from the table on the **Channel** tab.
3. Click **Delete**.

   Result: The Delete Confirmation displays.
4. Click **OK**.

   Results: The record is deleted from the database.

Related topic

Channel

9
Transfer Management

This chapter explains how to configure Credit Transfers.

This chapter contains the following topics.

Transfer Management Module

Credit Transfer Definition

Credit Transfer Response Mapping

Transfer Management Module

The **Transfer Management** screen lets you configure Credit Transfers. These can be used to convert cash credit into an alternative balance type for a Subscriber's own account or the account of another Subscriber.

The Transfer Management screen contains these tabs:

- Credit Transfer Definition, and
- Credit Transfer Response Mapping.

Accessing the Transfer Management screen

Follow these steps to open the Transfer Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > Transfer Management**.

   Result: You see the Transfer Management screen.

Credit Transfer Definition

The **Credit Transfer Definition** tab lets you add, modify or delete credit transfer definitions. The Credit Transfer can then be invoked either from the Edit Subscriber screen or through the PI.

Adding credit transfers

Follow these steps to add a new credit transfer definition.

1. In the Transfer Management screen, select service provider from the **Service Provider** drop down box.
2. On the **Credit Transfer Definition** tab, click **New**.

   Result: You see the New Credit Transfer screen.
3. In the **Name** field, enter a unique name for the credit transfer.

Note: The system automatically generates the value for the short name from the value you enter in the **Name** field.

4. From the Transfer Type area, select whether the credit transfer definition is for Peer to Peer or Service Bundle credit transfers.

   For more information about Transfer Types, see Credit transfer types.

5. From the **Charging Class** drop down list, select the charging class to use when charging the purchaser of the credit transfer.

   This drop down list is populated by the Billing Event Sets configured in the Wallet Management screen.

6. From the **Charging Event** drop down list, select the charging event to use when charging the purchaser of the credit transfer.

   This drop down list is populated by the Billing Events configured in the Wallet Management screen.

7. From the **Voucher Type** drop down list, select the voucher type to use for the credit transfer.

   For more information about Voucher Types, see Voucher Management.

8. If PIN authorization is required when performing this credit transfer, select the **PIN Required** check box.

9. If the recipient wallet type must be specified when performing this credit transfer, select the **Recipient Wallet Type Required** check box.

10. If the purchasing wallet type must be specified when performing this credit transfer, select the **Purchasing Wallet Type Required** check box.

11. From the Transfer Announcement area, select the announcement set and announcement entry to associate with the credit transfer. This announcement is played to the calling party when the call passes through the Select Credit Transfer node.

12. If you want to send a notification when this credit transfer occurs, perform the following in the SMS Notifications area:

    - Select the **Send SMS** check box
    - Select the SMS messages to send from the drop down lists

13. The drop down lists are populated by the notifications configured in the **Notifications** tab of the ACS Configuration screen. For more information, see *ACS User's Guide*.

    Note: When the credit transfer fails, a combined failure notification is also sent to the purchaser when the purchaser and recipient have different MSISDNs.

14. If you want to limit the **Product Types** for which the credit transfer is available, select the Product Types from the **Available Product Types** list and move them to the **Limited Product Types** list.

    To move a product type from one list to the other, select it in the list and click the appropriate double arrow (**>>** or **<<**) button.

    Tip: If the Limited Product Types list is empty, the credit transfer will be available to all product types.

15. Click **Save**.

Related topic

Credit Transfer Definition

Editing credit transfers

Follow these steps to edit an existing credit transfer definition.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. On the **Credit Transfer Definition** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Credit Transfer screen.
4. Edit the details as described in Adding credit transfers.
5. Click **Save**.

Related topic

Credit Transfer Definition

Deleting credit transfers

Follow these steps to delete an existing credit transfer definition.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. In the table on the **Credit Transfer Definition** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Credit Transfer prompt.
5. Click **OK**.

Related topic

Credit Transfer Definition

Credit Transfer Response Mapping

The **Credit Transfer Response Mapping** tab lets you add, modify or delete credit transfer responses. Credit transfer responses are the error messages defined for credit transfers. It also lets you add, modify and delete the display message translations mapped to each response.

Warning: You must specify a display message in each language used and for each response.

Topics:

Adding a credit transfer response

Editing a credit transfer response

Deleting a credit transfer response

Adding credit transfer response mappings

Editing credit transfer response mappings

Deleting credit transfer response mappings

Adding a credit transfer response

Follow these steps to add a new credit transfer response.

Tip: After you add a credit transfer response, you can add the message translations for it.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. On the **Credit Transfer Response Mapping** tab, click **New Response**.

   Result: You see the New Credit Transfer Response screen.
3. From the drop down list, select the **Response Template** for which to add message translation mappings.
4. If the **Response Number** field is available, type in the response number.

   Notes:

   - You can add response numbers only to DAP templates that contain a variable. To create a variable in the DAP template, add the "%d" string to the template.
   - You will only be able to use DAP templates if you have DAP installed.

   For more information about:

   - Notifications, see *ACS User's Guide*
   - DAP templates, see *DAP User's Guide*
5. Click **Save**.

Related topic

Credit Transfer Response Mapping

Editing a credit transfer response

Follow these steps to edit an existing credit transfer response.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. From the **Response** drop down list on the **Credit Transfer Response Mapping** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Credit Transfer Response screen.
4. Edit the details as described in Adding a credit transfer response.
5. Click **Save**.

Related topic

Credit Transfer Response Mapping

Deleting a credit transfer response

Follow these steps to delete a credit transfer response and its related message mappings.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. On the **Credit Transfer Response Mapping** tab, select the **Response** to delete from the drop down list.
3. Click **Delete Response**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Credit Transfer Responses prompt.
5. Click **OK**.

Related topic

Credit Transfer Response Mapping

Adding credit transfer response mappings

Follow these steps to add a new message mapping to a credit transfer response.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. From the **Response** drop down list on the **Credit Transfer Response Mapping** tab, select the response for which you want to create a new message mapping.
3. Click **New Message**.

   Result: You see the New Credit Transfer Error Message screen.
4. From the drop down list, select the **Language** for the Display Message.

   For more information about configuring languages, see *ACS User's Guide*.
5. In the **Display Message** field, type in the message that maps to the selected response in the selected language.
6. Click **Save**.

Related topic

Credit Transfer Response Mapping

Editing credit transfer response mappings

Follow these steps to edit an existing message mapping to credit transfer response.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. From the **Response** drop down list on the **Credit Transfer Response Mapping** tab, select the response which has the message mapping to edit.
3. Click **Edit Message**.

Result: You see the Edit Credit Transfer Error Message screen.

4. If required, select a different **Language** for the Display Message from the drop down list.
5. If required, edit the **Display Message** using the selected language.
6. Click **Save**.

Related topic

Credit Transfer Response Mapping

Deleting credit transfer response mappings

Follow these steps to delete a credit transfer response mapping

Warning: Caution should be used when deleting credit transfer response mappings. If all the mappings for a specific response are deleted, then the default smsTrigDaemon response will be output. The default messages may be hard for customers to understand.

For more information about the smsTrigDaemon, see *SMS Technical Guide*.

1. In the Transfer Management screen, select the **Service Provider** from the drop down box.
2. From the **Response** drop down list on the **Credit Transfer Response Mapping** tab, select the Response which has the message mapping to delete.
3. On the table, select the Display Message to delete and click **Delete Message**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Credit Transfer Response Mapping prompt.
5. Click **OK**.

Related topic

Credit Transfer Response Mapping

10

Notifications Management

This chapter explains how to configure Profile Notifications.

This chapter contains the following topics.

Notifications Introduction

Notification Management Module

Profile Notifications

Notifications Introduction

Profile notifications are SMSs which are sent to subscribers when their profile fields are changed. They can be used to inform subscribers about events which have happened to their accounts.

Profile notifications are different from real-time wallet notifications, control plan feature node notifications or periodic charge notifications, though all these notifications use SMS notifications and DAP templates.

Notifications can be delivered through the ACS Notifications subsystem, or the Data Access Pack notifications subsystem. To use the DAP notifications, you must have DAP installed.

For more information about how profile notifications are delivered, see *CCS Technical Guide*.

Preconditions

Preconditions are used to determine when an update to the Subscriber profile will trigger a Profile Notification message. Each precondition is evaluated based on a selected profile field and the Precondition Type configured for it.

You can specify more than one precondition per notification message. If you specify more than one precondition, then these must all be joined together, either using an 'And' or an 'Or' operator. Use:

- And to generate the notification only if all the preconditions are met.
- Or to generate the notification if any of the preconditions are met.

Tip: If you do not specify any preconditions for the notification message, then it will be triggered unconditionally.

This table describes the available Precondition Types.

Precondition Type	Availability	Description
Field Created	All field types	The precondition is met when the selected profile field is not present in the old subscriber profile but is present in the new subscriber profile.

Precondition Type	Availability	Description
Field Modified	All field types	The precondition is met when the old and new values for the selected profile field are different.
Field Removed	All field types	The precondition is met when the selected profile field is present in the old subscriber profile but is no longer present in the new subscriber profile.
Check Old Value or Check New Value	Only available for integer, byte, Boolean and date field types	Compares the old or new value for the selected profile field with a specified value. See Checking profile field values for details.

Checking profile field values

The Check Old Value and Check New Value precondition types provide the facility to trigger Profile Notifications based on a precondition expression that compares the selected Profile Field with a specified value.

Precondition expressions have one of the following formats:

1. `<Profile Field Value> <Compare Operator> <Compare Value 1>`
2. `(<Profile Field Value> '>' <Compare Value 1>) And (<Profile Field Value> '<' <Compare Value 2>)`

Tips:

- If the selected Profile Field is a Boolean field, then its value may only be compared with the Boolean values 'True' or 'False'. The precondition is met if the Profile Field value matches the specified Boolean value.
- For format 2, the precondition is met if the profile field value is between 'Compare Value 1' and 'Compare Value 2' ".

This table describes parameters for the precondition expressions that determine when a Profile Notification message is triggered.

Parameter	Description
Profile Field Value	The value for the selected Profile Field from either the old or the new subscriber profile, depending on the Precondition Type.

Parameter	Description
Compare Operator	Determines how the comparison is made. If you select: = the expression evaluates to true if the value from the Profile Field is equal to the specified Compare Value != the expression evaluates to true if the value from the Profile Field is not equal to the specified Compare Value < the expression evaluates to true if the value from the Profile Field is less than the specified Compare Value > the expression evaluates to true if the value from the Profile Field is greater than the specified Compare Value **Note:** If you select Not Used, no comparison will be made.
Compare Value 1	The first value against which the Profile Field Value will be compared.
Compare Value 2	The second value against which the Profile Field Value will be compared. This must be greater than Compare Value 1. **Note:** Compare Value 2 may only be set if you selected the '>' Compare Operator for Compare Value 1.

Notification Management Module

The **Notification Management** screen lets you configure Profile Notifications.

The Notification Management screen contains this tab:

- Profile Notifications.

Accessing the Notification Management screen

Follow these steps to open the Notification Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > Notification Management**.

   Result: You see the Notification Management screen.

Profile Notifications

The **Profile Notifications** tab lets you configure Profile Notifications that are triggered by changes to subscriber profiles.

Each profile notification is configured by specifying:

- whether a DAP and/or a notification is sent
- the Preconditions used to qualify when the notification will be triggered

- the DAP Template used to generate the DAP notification message, and
- the Profile Notification Fields that will be substituted for the parameters defined in the DAP Template.

For more information about configuring Notifications, see *ACS User's Guide*.

For more information about configuring DAP Templates, see *DAP User's Guide*.

Topics:

Adding profile notifications

Editing profile notifications

Deleting profile notifications

Adding profile preconditions

Editing profile preconditions

Deleting profile preconditions

Adding profile notification fields

Editing profile notification fields

Deleting profile notification fields

Adding profile notifications

Follow these steps to add a new Profile Notification. This can trigger the relevant type of notification from the system.

1. In the Notification Management screen, select the **Service Provider** from the drop down box.
2. On the **Profile Notifications** tab, click **New**.

   Result: You see the New Profile Notification screen.
3. In the **Name** field, type the Profile Notification name.
4. Select the **DAP Operation** you want to use to construct the DAP notification message.

   Tip: If you selected **No DAP** then a DAP notification will not be triggered and you must select an SMS Template for the notification instead.
5. From the **Suppress DAP Notification** drop down list, select **Not Used** if you do not want to suppress DAP notifications. To suppress DAP notifications, select the Suppress Notification field. All notifications for a profile update that include this field with a value set to True will be suppressed.

   Note: The suppress field will be reset to false when a notification has been suppressed.
6. Select the **SMS Template** you want to use to construct the notification message.

   Tip: If you selected **No SMS** then a notification will not be triggered and you must ensure a DAP Template is selected for the notification instead.
7. From the **Suppress Notification** drop down list, select **Not Used** if you do not want to suppress notifications. To suppress notifications, select the **Suppress**

Notification field. All notifications for a profile update that include this field with a value set to True will be suppressed.

Note: The suppress field will be reset to false when a notification has been suppressed.

8. In the **Precondition Join** field select the operator to use to join the preconditions listed in the Preconditions table. Choose:
   - **And** to trigger a notification only when all the preconditions evaluate to true.
   - **Or** to trigger a notification if any of the preconditions evaluates to true.
9. In the **Preconditions** panel, specify the preconditions that will trigger the profile notification. For details, see Adding profile preconditions.
10. In the **Fields** panel, configure a profile notification field for each parameter defined in the DAP Template. For details, see Adding profile notification fields.

    Tip: It is recommended that you use the fields evaluated by the preconditions.
11. Click **Save**.

Related topic

Profile Notifications

Editing profile notifications

Follow these steps to edit an existing Profile Notification.

1. In the Notification Management screen, select the **Service Provider** from the drop down box.
2. On the **Profile Notifications** tab, select the Profile Notification to edit.
3. Click **Edit**.

   Result: You see the Edit Profile Notification screen.
4. Edit the profile notification configuration as described in Adding profile notifications.
5. Click **Save**.

Related topic

Profile Notifications

Deleting profile notifications

Follow these steps to delete an existing Profile Notification.

1. In the Notification Management screen, select the **Service Provider** from the drop down box.
2. On the **Profile Notifications** tab, select the Profile Notification to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK** to delete the record from the database.

   Result: You see the Profile Notifications message box.
5. Click **OK**.

Related topic

Profile Notifications

Adding profile preconditions

Follow these steps to add a precondition to a profile notification.

1. On the **Preconditions** panel in the New Profile Notification screen, click **Add**.

   Result: You see the Add Profile Precondition Field screen.

2. Select the **Profile Field** to evaluate in the precondition.
3. Select the **Precondition Type** from the drop down list. For more information on precondition types, see Preconditions.

   Note: The list of available precondition types depends on the data type of the selected profile field.

4. If you selected either **Check Old Value** or **Check New Value**, follow steps 5 to 9. Otherwise go to step 9.
5. If the selected Profile Field is a BOOLEAN field, select True or False from the drop down list and go to step 9. Otherwise go to step 6.

   Note: The precondition is met if the Profile Field value and the selected BOOLEAN value are the same.

6. Select the **Compare Operator** from the drop down list.

   Note: If you select Not Used, no comparison will be made.

7. In the **Compare Value 1** field, enter the value you want to compare with the value from the subscriber profile field. In the case of DATE type profile fields, select the date you want from the drop down lists.
8. If you selected the '>' Compare Operator, then you may enter a second compare value in the **Compare Value 2** field if required, To enter a date in the Compare Value 2 field, select the **Use Date** check box.

   Note: The precondition is met if the profile field value is greater than Compare Value 1 and less than Compare Value 2.

9. Click **Ok**.

Related topic

Profile Notifications

Editing profile preconditions

Follow these steps to edit an existing Precondition for a Profile Notification.

1. In the **Preconditions** panel in the New/Edit Profile Notification screen, select the row for the Precondition you want.
2. Click **Edit**.

   Result: You see the Edit Profile Precondition Field screen.

3. Edit the precondition details as described in Adding profile preconditions.
4. Click **Ok**.

Deleting profile preconditions

Follow these steps to delete an existing Precondition for a Profile Notification.

1. In the **Preconditions** panel on the New/Edit Profile Notification screen, select the row for the Precondition to delete.
2. Click **Delete**.
3. Click **Save**.

   Result: The record is deleted from the database.

   Tip: The record is not deleted from the database until you click **Save**. Prior to this point you can reverse any changes by clicking **Cancel**.

Adding profile notification fields

Follow these steps to add a field to a profile notification.

1. On the **Fields** panel in the New Profile Notification screen, click **Add**.

   Result: You see the Add Profile Notification Field screen.
2. If you need the MSISDN (subscriber ID) to be made available to DAP for the XML request, select the **Use Subscriber ID** check box.
3. Select the **Profile Field** to use in the notification message.
4. Select the **DAP Parameter** from the drop down list.

   Warning: You must configure a profile notification field for all the DAP parameters defined in the DAP template. Once a DAP parameter has been used it is removed from the list of available parameters.
5. Select the **Source Profile**. Select:
   - Old - to substitute the Profile Field value from the old subscriber profile for the selected DAP parameter.
   - New - to substitute the Profile Field value from the new subscriber profile for the selected DAP parameter.
6. Click **Ok**.

Related topic

Profile Notifications

Editing profile notification fields

Follow these steps to edit the configuration for a Profile Notification field.

1. On the **Fields** panel in the New/Edit Profile Notification screen, select the row for the Profile Notification Field you want to edit.
2. Click **Edit**.

   Result: You see the Edit Profile Notification Field screen.
3. Edit the details as described in Adding profile notification fields.
4. Click **Ok**.

Related topic

Profile Notifications

Deleting profile notification fields

Follow these steps to delete an existing Field for a Profile Notification.

1. In the **Fields** panel on the New/Edit Profile Notification screen, select the row for the field to delete.
2. Click **Delete**.
3. Click **Save**.

   Result: The record is deleted from the database.

   Tip: The record is not deleted from the database until you click **Save**. Prior to this point you can reverse any changes by clicking **Cancel**.

Related topic

Profile Notifications

11

Task Management

This chapter explains how to configure BPL tasks.

This chapter contains the following topics.

Task Management Module

Business Process Logic

BPL Response Mapping

Response Mappings and Control Plans

Task Management Module

The **Task Management** screen lets you configure Business Process Logic tasks. BPL tasks can be used to execute tasks specified in control plans.

The Task Management screen contains these tabs:

- Business Process Logic, and
- BPL Response Mapping.

Configuring BPL tasks overview

CCS enables you to configure complex actions which can be triggered from the Edit Subscriber screen using the Business Process Logic (BPL) task buttons. A BPL task executes a set of pre-configured actions which are defined in an associated control plan.

To configure a BPL task, complete following steps:

1. Configure the background building blocks required to set up the BPL's control plan, for example:
   - Profile fields
   - Notifications
   - Named events
   - Balance types
2. Using the CPE, build the control plan the BPL task will run. Note, the control plan defines the BPL logic. Feature nodes which require interaction cannot be used in BPL task control plans.

   For more information about the CPE, see *CPE User's Guide*.
3. On the Business Process Logic tab, define the BPL task (including mapping the control plan to the BPL).
4. On the BPL Response Mapping tab, configure the BPL Responses that translate the success and failure responses returned by the control plan into messages for the user who triggers the BPL task.

5. Using the Subscriber Profile Manager, configure the BPL task to appear on the Edit Subscriber screen from where it can be triggered.

   For more information about the Subscriber Profile Manager, see *SPM User's Guide*.

Accessing the Task Management screen

Follow these steps to open the Task Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > Task Management**.

   Result: You see the Task Management screen.

Business Process Logic

The **Business Process Logic** tab lets you configure the business processes that may be executed either through the Edit Subscriber screens or through the PI.

Adding business process logic tasks

Follow these steps to add a new business process logic (BPL) task.

1. In the Task Management screen, select the **Service Provider** from the drop down box.
2. On the **Business Process Logic** tab, click **New**.

   Result: You see the New Business Process Logic screen.
3. In the **Short Name** field, enter a unique name for the BPL task. This can be up to 16 characters long. The short name is used to identify the BPL task in BPL execution requests to the smsTrigDaemon.

   Note: It is also used by the PI when initiating a BPL request using the CCSBPL=EXE command.
4. In the **Full Name** field, enter a unique full name for the BPL task. It can be up to 64 characters long.

   The full name appears in the Edit Subscriber screen on the label of the button associated with the BPL task.
5. From the **Control Plan** drop down list, select the control plan to be executed by the BPL task.

   The drop down list displays all the control plans a subscriber can use.

   Tip: This list can be shortened by using the **Search By** field and then **Search**.
6. In the **Description** field, enter a description for the BPL task.
7. In the **Service Handle** field, enter the BPL service application name on the SLC.

   Warning: This field is required. It should be set to 'CCS_BPL' unless you are using a non-default configuration. In this case additional configuration of xmlTrigDaemon, SLEE and slee_acs is required. Refer to *XML TCAP Interface Technical Guide* for details.

8. In the **PI Security Level** field, enter the PI security level number. Valid values are in the range 0 to 99.

   Note: The PI security level is used to limit which users may execute the BPL task through the PI. Users who have a PI security level that is lower than the PI security level for the BPL task will not be able to execute it.

   For more information about the PI, see *PI User's Guide*.

9. Select the **Wallet Selection** check box if you want to be able to select the wallet the BPL task applies to, when the BPL task is executed through the screens.

10. Add any BPL parameters that may be required during execution of the BPL task. You can add up to six parameters.

    These parameters are filled out by the user on the Confirm Execute BPL prompt when the BPL is executed. For details see Adding a BPL parameter.

    Warning: BPLparameters must correspond to the extension parameters (4 to 9) defined in the **acs.conf** configuration file. For more information about the **acs.conf,** see *ACS Technical Guide*.

11. Click **Save**.

Related topic

Business Process Logic

Editing business process logic tasks

Follow these steps to edit an existing business process logic task.

1. In the Task Management screen, select the **Service Provider** from the drop down box.
2. In the table on the **Business Process Logic** tab, select the task to edit.
3. Click **Edit**.

   Result: You see the Edit Business Process Logic screen.

4. Edit the details as described in Adding business process logic tasks.
5. Click **Save**.

Related topic

Business Process Logic

Deleting business process logic tasks

Follow these steps to delete an existing business process logic task.

1. In the Task Management screen, select the **Service Provider** from the drop down box.
2. In the table on the **Business Process Logic** tab, select the task to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The BPL task and any associated BPL parameters are deleted from the database, and you see the Delete Successful prompt.

5. Click **OK**.

Related topic

Business Process Logic

Adding BPL parameters

Follow these steps to add a new parameter to a BPL task.

Warning: This parameter must correspond to an INAP extension parameter configured in **acs.conf.** For more information about this configuration, see *ACS Technical Guide*.

1. In the New or the Edit Business Process Logic screen, click **New**.

   Result: You see the New BPL Parameter screen.

2. In the **Display Name** field enter the parameter's name. This will be displayed next to a data entry box on the Confirm Execute BPL prompt when you execute the BPL task.

   For more information about executing BPL tasks, see *CCS User's Guide*.

3. If a value must be supplied for this parameter in order to execute this BPL task, select the **Mandatory** check box.

4. Click **Ok**.

   Result: The new parameter appears in the BPL Parameters table.

5. To change the order in which the parameter appears in the table, select it in the table and then:

   - Click **Up** to move the parameter up one row.
   - Click **Down** to move it down one row.

   Tip: The order in which the parameters appear in the table determines which INAP extension parameter they correspond to. The parameter in the first row corresponds to extension parameter 4. The parameter in the next row corresponds to extension parameter 5, and so on.

6. Click **Save**.

   Result: The changes are saved to the database.

Related topic

Business Process Logic

Editing a BPL parameter

Follow these steps to edit an existing BPL parameter.

1. In the New or the Edit Business Process Logic screen, select the record to edit in the BPL Parameters table.

2. Click **Edit**.

   Result: You see the Edit BPL Parameter screen.

3. In the **Display Name** field enter a new name for the parameter, if required.

4. Select or deselect the **Mandatory** check box as required.

Warning: You must supply a value for this parameter at run time if this field is selected.

5. Click **Ok**.
6. To change the order in which the parameter appears in the table, use the **Up** and **Down** buttons:
   - Click **Up** to move the parameter up one row.
   - Click **Down** to move it down one row.
7. **Tip:** The order in which the parameters appear in the table determines which INAP extension parameter they correspond to. The parameter in the first row corresponds to extension parameter 4. The parameter in the next row corresponds to extension parameter 5, and so on.
8. Click **Save**.

   Result: The changes are saved to the database.

Related topic

Business Process Logic

Deleting BPL parameters

Follow these steps to delete an existing BPL parameter.

1. In the BPL Parameters table on the New or the Edit Business Process Logic screen, select the BPL parameter to delete.
2. Click **Delete**.
3. Click **Save**.

   Result: The record is deleted from the database.

   Tip: The record is not deleted from the database until you click **Save**. Prior to this point you can reverse any changes by clicking **Cancel**.

Related topic

Business Process Logic

BPL Response Mapping

The **BPL Response Mapping** tab lets you map user friendly messages and their translations to the responses received from the SLC when a BPL task is executed.

Topics:

Adding BPL responses

Editing BPL responses

Deleting BPL responses

Adding translations for BPL responses

Editing translations for BPL responses

Deleting translations for BPL responses

Adding BPL responses

Follow these steps to add a new BPL response.

1. In the Task Management screen, select the **Service Provider** from the drop down box.
2. Select the **BPL Response Mapping** tab.
3. From the **BPL** drop down box, select the BPL task for which to configure a new response, and click **New Response**.

   Result: You see the New BPL Response screen.
4. From the **Response Template** drop down list, select the BPL response to configure.
5. If the **Response Number** field is available, enter the response number.

   Tip: This field is only available where the response template contains the '%d' variable. The '%d' is replaced by the response number when you save the response.
6. Click **Save**.

Related topic

BPL Response Mapping

Editing BPL responses

Follow these steps to edit an existing BPL response.

1. In the Task Management screen, select the service provider from the **Service Provider** list.
2. Select the **BPL Response Mapping** tab.
3. From the **BPL** list, select the BPL task for which the response is configured.
4. From the **Response** list, select the response to edit and click **Edit Response**.

   Result: You see the Edit BPL Response screen.
5. If required, select a different **Response Template**.
6. If required, specify a different **Response Number**.
7. Click **Save**.

Related topic

BPL Response Mapping

Deleting BPL responses

Follow these steps to delete an existing BPL response and any related message mappings.

1. In the Task Management screen, select the **Service Provider** from the drop down box.
2. Select the **BPL Response Mapping** tab.

3. From the **BPL** drop down list, select the BPL task which has the error to delete.

   From the **Response** drop down list, select the response you want to delete.

4. Click **Delete Response**.

   Result: You see the Delete Confirmation prompt.

5. Click **OK**.

   Result: You see the BPL Responses delete success prompt.

6. Click **OK**.

   Result: The BPL response and any related message translations are deleted from the database.

Related topic

BPL Response Mapping

Adding translations for BPL responses

Follow these steps to add a new translation for a BPL response.

1. On the **BPL Response Mapping** tab in the Task Management screen, select the **BPL** from the drop down box.
2. From the **Response** drop down list, select the response for which to map a new message translation.
3. Click **New Message**.

   Result: You see the New BPL Response Message screen.

4. From the **Language** drop down box, select the language for the response message.

   Tip: The language to use is configured in the ACS Tools screen, **Language** tab. During execution, the configured screens runtime language will determine which message is shown. If a language is not specifically configured then the default screens language is used. This will be either the default language for the service provider, or the global default language (as configured in the ACS Tools screen). For more information about setting languages, see *ACS User's Guide*.

5. In the **Display Message** field, enter the message text.
6. Click **Save**.

Related topic

BPL Response Mapping

Editing translations for BPL responses

Follow these steps to edit a translation for a BPL response message.

1. On the **BPL Response Mapping** tab in the Task Management screen, select the **BPL** from the drop down box.
2. From the **Response** drop down list, select the response.
3. In the table, select the message translation to edit and click **Edit Message**.

   Result: You see the Edit BPL Response Message screen.

4. From the **Language** drop down box, select a different language if required.
5. Edit the **Display Message** as required.
6. Click **Save**.

Related topic

BPL Response Mapping

Deleting translations for BPL responses

Follow these steps to delete message mapping for a BPL response.

1. On the **BPL Response Mapping** tab in the Task Management screen, select the **BPL** from the drop down box.
2. From the drop down list, select the **Response** you want.
3. Select the row in the table for the message mapping to delete and click **Delete Message**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

   Result: You see the BPL Response Mapping prompt.
5. Click **OK**.

   Result: The record is deleted from the database.

Related topic

BPL Response Mapping

Response Mappings and Control Plans

This section shows an example BPL control plan for a periodic charge subscription. It explains how to correctly set up the nodes in the control plan in conjunction with the response mappings configured in the Task Management screen.

Success response mapping

In the example, the Success branch of the Periodic Charge Subscription node connects to a Terminate Unchanged feature node. When the control plan executes successfully a '200 OK' message will be returned to the triggering daemon. This is reported as a simple Success response for which no mapping is required.

Note: An alternative is to use a Found response to convey a particular message for success scenarios. This is triggered by the Unconditional Termination feature node entering your Connect To number (Termination Number), which will be used in the Found mapping.

Disconnect call response mappings

In the example, a Disconnect Call node is connected to each of the other exits from the Periodic Charge Subscription node:

- Not supported

- Unsubscribed
- Failure
- Error

When a Disconnect node exit is taken, this results in a '406 Not Acceptable' response with the configured Cause value. This means that the configured Cause value must be mapped to a Not Acceptable response mapping.

Note: You should not set the Cause value to 31 as this has a special meaning. It is interpreted as '404 Not Found' by the triggering daemon, which means that either the subscriber or the control plan has not been found. If you use this code then you will not be able to determine whether the error means one of the following:

- There has been an unexpected control plan error.
- The subscriber has not been found.

12

EDR Management

This chapter explains how to configure the components used to manage EDRs.

Warning: The EDR Management screens are only available if the Subscriber Management module has been installed on your system and if you are using the VWS domain. If you are using a third party domain, then you will not be able to access these screens.

This chapter contains the following topics.

EDR Management Module

EDR Types

EDR Categories

EDR Elements

EDR Templates

EDR Viewer Columns

EDR Management Module

The EDR Management screen lets you configure how EDRs are searched for and displayed in the View EDRs screen. It contains these tabs:

- EDR Types
- EDR Categories
- EDR Elements
- EDR Templates
- EDR Viewer Columns

Accessing the EDR Management screen

Follow these steps to open the EDR Management screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Prepaid Charging > EDR Management**.

   Result: You see the EDR Management screen.

EDR Types

This screen enables you to add, modify or delete EDR types.

EDR types set records for each EDR type based on EDR type number. The EDR type number is reported as the CDR_TYPE field in each EDR.

Note: The standard CCS EDR types are configured on installation.

Example EDR 1 for single tariff rated call

BILLING_ENGINE_ID=21|SCP_ID=366273322|SEQUENCE_NUMBER=487291|
CDR_TYPE=1|RECORD_DATE=20070423190107|ACCT_ID=83| ACCT_REF_ID=83|
CLI=01206233252|ACS_CUST_ID=1|BALANCE_TYPES=1|BALANCES=49880|
COSTS=120|ACCOUNT_TYPE=22|CASCADE_ID=44|RATES=60|
LENGTHS=2810.00|DISCOUNTS=0| MAX_CHARGE=500|DURATION=120.00|
DURATION_CHARGED=120.00|TN=01473|TCS=20070423181310|
TCE=20070423181510|CS=S|DISCOUNT_TYPE=S*W*R|WALLET_TYPE=1|
FCA=01473254338|END_CALL_REASON=14

Adding EDR types

Follow these steps to add a new EDR type.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On EDR Types tab, click **New**.

   Result: You see the New EDR Type screen.
3. In the **Name** field, type a unique name for this EDR type.
4. In the **EDR Type** field, type a unique EDR type number. This must correspond to the value of the CDR_TYPE in EDRs of this type.

   For more information about EDR type numbers, see *EDR Definitions Operations Guide*.
5. Click **Save**.

Related topic

EDR Types

Editing EDR types

Follow these steps to edit an existing EDR type.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Types tab, select the EDR type you want to edit.
3. Click **Edit**.

   Result: You see the Edit EDR Type screen.
4. Edit the details as described in Adding EDR types.
5. Click **Save**.

Related topic

EDR Types

Deleting EDR types

Follow these steps to delete an existing EDR type.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Types tab, select the EDR type you want to delete.
3. Click **Delete**.

   Result: A Delete Confirmation prompt appears.
4. Click **OK**.

   Result: The record is deleted and a confirmation prompt appears.
5. Click **OK**.

Related topic

EDR Types

EDR Categories

This screen enables you to add, modify or delete EDR categories.

EDR categories group EDR types into sets. You can search on EDR Category in the View EDRs for Subscriber screen.

Note: The standard CCS EDR categories are configured on installation.

Adding EDR categories

Follow these steps to add a new EDR category.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On EDR Category tab, click **New**.

   Result: You see the New EDR Category screen.
3. In the **Category Name** field, type a unique name for this EDR category.
4. From the **Available List** field, select an EDR type to add to this EDR category.

   Notes:

   - The Available List is populated by the entries in the EDR Types tab.
   - It will display any EDR type which has not been used for any other EDR category.
5. Click **>**.

   Result: The EDR type highlighted in step 4 will be moved to the **Selected** list.

   Note: To move all EDR types to the Selected List, click **>>**.
6. Repeat steps 4 and 5 until you have moved all the EDR types which should be part of this EDR category are in the Selected List.
7. Click **Save**.

Related topic

EDR Categories

Editing EDR categories

Follow these steps to edit an existing EDR category.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Categories tab, select the EDR category you want to edit.
3. Click **Edit**.

   Result: You see the Edit EDR Category screen.
4. Add any new EDR types to this EDR category as described in Adding EDR categories.
5. If you want to remove any EDR types from this EDR category, select it from the Selected List and click **<**.

   Note: To remove all EDR types from the list, click **<<**.
6. Click **Save**.

Related topic

EDR Categories

Deleting EDR categories

Follow these steps to delete an existing EDR category.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Categories tab, select the EDR category you want to delete.
3. Click **Delete**.

   Result: A Delete confirmation prompt appears.
4. Click **OK**.

   Result: The EDR category is deleted and the EDR Categories prompt appears.
5. Click **OK**.

Related topic

EDR Categories

EDR Elements

This screen enables you to add, modify or delete EDR elements. EDR elements define how data is handled in the graphic elements on the EDR Details for Subscriber screen. They are reusable and are used to define EDR templates.

Note: The standard CCS EDR elements are configured on installation.

Adding EDR elements

Follow these steps to add a new EDR element.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On EDR Elements tab, click **New**.

   Result: You see the New EDR Element screen.

3. In the **Element Name** field, type a unique name for this EDR element. This string will be used as the field name for this element in the EDR Details for Subscriber screen.
4. From the **Field Type** list, select the type of EDR field this element will correlate to.
5. If you selected a text field type from the **Field Type** list, enter the tag from the EDR in the **EDR Tag** field. This string must match the name of a field in an EDR exactly.

   For more information about the fields included in EDRs, see *EDR Definitions Operations Guide*.
6. If you would like to mask the field for users who do not have permission to view the content, select the Display Masked checkbox.
7. If you selected a table field type from the Field Type drop down list, complete the EDR Tags table as described in Adding EDR Tag entries.
8. Click **Save**.

Related topic

EDR Elements

Editing EDR elements

Follow these steps to edit an existing EDR element.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Elements tab, select the EDR element you want to edit.
3. Click **Edit**.

   Result: You see the Edit EDR Element screen.
4. Edit the details as described in Adding EDR elements.
5. Click **Save**.

Related topic

EDR Elements

Deleting EDR elements

Follow these steps to delete an existing EDR element.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Elements tab, select the EDR element you want to delete.
3. Click **Delete**.

   Result: A Delete confirmation prompt appears.
4. Click **OK**.

   Result: The EDR element is deleted and the EDR Elements prompt appears.
5. Click **OK**.

Related topic

EDR Elements

Adding EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

1. In the New EDR Element screen or the Edit EDR Element screen, click **New** in the EDR Tags area.

   Result: The New Element Node screen will appear.

2. In the **EDR Tag** field, enter the tag from the EDR. This string must match the name of a field in an EDR exactly.

   For more information about the fields which appear in EDRs, see *EDR Definitions Operations Guide*.

3. In the **Tag Heading** field, enter the name of the column this tag's details will appear under in the EDR Details for Subscriber screen.

4. Click **Save**.

   Result: The EDR element node will be added to the EDR Tags table in the New EDR Element screen.

Related topic

EDR Elements

Editing EDR Tag entries

Follow these steps to add a new record to the EDR Tags table.

1. In the New EDR Element screen or the Edit EDR Element screen, select the EDR tag you want to edit from the EDR Tags table, and click **Edit**.

   Result: The Edit Element Node screen will appear.

2. Edit the fields as described in Adding EDR Tag entries.

3. Click **Save**.

Related topic

EDR Elements

Deleting EDR Tag entries

Follow these steps to add a new EDR element.

1. In the New EDR Element screen or the Edit EDR Element screen, select the EDR tag you want to delete from the EDR Tags table, and click **Delete**.

   Result: The Delete Confirmation prompt will appear.

2. Click **OK**.

Related topic

EDR Elements

EDR Templates

This screen enables you to add, modify or delete EDR templates. EDR templates are used on the EDR Details for Subscriber screen to display the information in the EDR.

Note: The standard CCS EDR templates are configured on installation.

Adding EDR templates

Follow these steps to add a new EDR template.

1. In the EDR Management screen, select the service provider from the Service Provider List.
2. On **EDR Templates** tab, click **New**.

   Result: The New EDR Template screen is displayed.
3. In the **Template Name** field, type a unique name for this template.
4. From the **EDR Category** list, select the category EDRs with this template should be associated with.
5. From the **Available List** field, select an EDR element you want to display in this template and click **>**.

   Note: To use all the EDR elements in the Available List, click **>>**.
6. The display order of the elements in the Selected List is used to set the order in which the fields appear in the View EDRs for Subscriber screen.

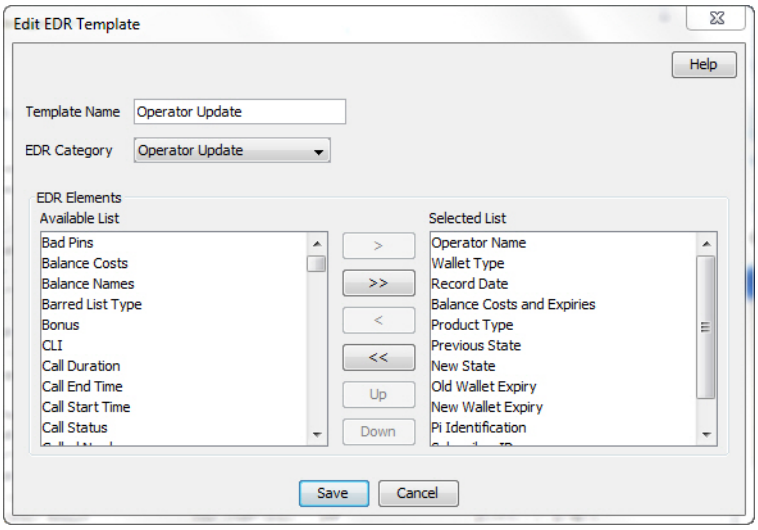
   To change the display order for an element in the Selected List, select the element you want to move, and click the **Up** or **Down** button.
7. Click **Save**.

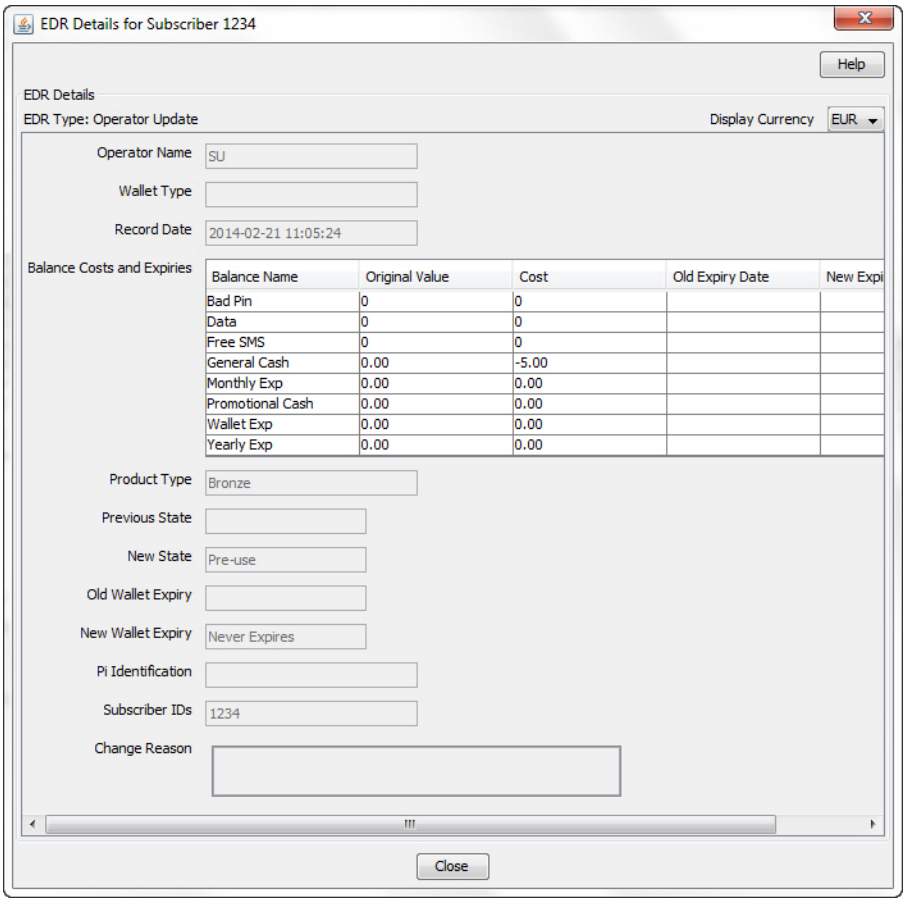
Related topic

EDR Templates

Example EDR template

These two screens show an EDR template, and the EDR Details screen using that EDR template.





Editing EDR templates

Follow these steps to edit an existing EDR template.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the **EDR Templates** tab, select the EDR template you want to edit.

3. Click **Edit**.

   Result: You see the Edit EDR Template screen.

4. Edit the details as described in Adding EDR templates.

5. If you want to remove any EDR elements from this EDR template, select it from the Selected List and click **<**.

   Note: To remove all EDR elements from the list, click **<<**.

6. Click **Save**.

Related topic

EDR Templates

Deleting EDR templates

Follow these steps to delete an existing EDR template.

1. In the EDR Management screen, select the **Service Provider** from the drop down box.
2. On the EDR Templates tab, select the EDR template you want to delete.
3. Click **Delete**.

   Result: A Delete confirmation prompt appears.

4. Click **OK**.

   Result: The EDR template is deleted and the EDR Templates prompt appears.

5. Click **OK**.

Related topic

EDR Templates

EDR Viewer Columns

The EDR Viewer Columns tab enables you to edit the list of optional EDR fields that you can display in the EDR Viewer in addition to the standard fields that are displayed for each type of EDR. You access the EDR Viewer from the Edit Subscriber screen.

Editing optional EDR columns for display in the EDR Viewer

Follow these steps to edit the list of additional EDR elements that you can display in the EDR Viewer.

1. In the EDR Management screen, select the service provider from the Service Provider List.
2. On the **EDR Viewer Columns** tab, click **Edit**.

   Result: The Edit EDR Viewer Columns screen dialog opens and displays a predefined list of EDR elements.

3. Select each EDR element that you want to display in the EDR Viewer from the **Available List** in turn and move it to the **Selected List** by clicking **>**.

Note: To use all the EDR elements in the **Available List**, click **>>**. To remove an EDR element from the Selected List click **<**, or click **<<** to remove all the selected EDR elements

4. The display order of the elements in the **Selected List** is used to set the order in which the fields appear in the EDR Viewer.

   To change the display order for an element in the **Selected List**, select the element you want to move, and click the **Up** or **Down** button.

5. Click **Save**.

Related topic

EDR Viewer Columns

13
System Overview

This chapter explains the main features of Voucher Manager and describes the basic functionality of the system.

This chapter contains the following topics.

Vouchers Introduction

Security

Power Charge Scenarios

Vouchers Introduction

Vouchers are credit coupons which are used to add value to wallet balances.

Telcos can create and distribute the vouchers according to their preference and need. They can be distributed in card form or as mail-out discount offers. They may be purchased from the telco.

CCS provides systems for:

- Creating voucher types and batches
- Securing vouchers (through PINs)
- Redeeming vouchers
- Automatic deletion of archived vouchers

Note: Vouchers are sometimes referred to as scratch cards.

Voucher data

Each voucher contains this data:

- Product types they can be used for
- Balance type to credit
- Amount to be credited
- Expiry date for each new bucket
  - Pre-Use expiry period sets date a voucher must first be used or its balance will expire
  - Balance expiry period sets the time after a voucher is first used after which any outstanding voucher balance will expire

Vouchers used for recharge may affect multiple balance types.

Voucher states

Here is the list of voucher and voucher batch states:

- Created
- Active
- Frozen

When you create a voucher batch the batch state is set to Created. You must set the batch state to Active if you want to redeem the vouchers in the batch. You may also need to set the state of each voucher within the batch to Active.

Note: A voucher may only be redeemed if it is in an active state and the voucher batch it belongs to is also in an active state.

Reported voucher state

The status of an individual voucher or a range of vouchers within a batch can be updated. This means that individual vouchers within the batch may have different states to the batch itself. When the batch and voucher states are different, the batch state may override the voucher state so that the reported state of the voucher is different to its actual state.

This table shows what the reported voucher state will be for the available voucher and batch states.

Actual Voucher State	Created Batch	Active Batch	Unavailable Batch
Created	Voucher reported as created	Voucher reported as created	Voucher reported as frozen
Active	Voucher reported as created	Voucher reported as active	Voucher reported as frozen
Frozen	Voucher reported as created	Voucher reported as frozen	voucher reported as frozen
Deleted	Voucher reported as created	Voucher reported as deleted	voucher reported as frozen

Redeeming vouchers

Vouchers can be redeemed by:

- Providing voucher details using the IVR menu set up in a control plan
- Customer service representatives using the Voucher Recharge tab on the Voucher Management screen.

Redeeming a voucher changes wallet balances and voucher status. Voucher recharges add value to the personal wallet by default. The business wallet can be selected using normal wallet selection features. If the subscriber only has one wallet, their recharge is automatically applied to that wallet. Wallet balance changes are made using VWS's voucher subsystem.

Automatic voucher deletion

Vouchers that have been redeemed will be archived on a weekly basis. The archived vouchers will be automatically deleted from the VWS after a configurable number of weeks have elapsed.

The number of weeks to keep archived vouchers is set on the AVD Configuration tab. This tab also displays the date ranges for which redeemed vouchers will be deleted.

Security

Voucher PINs

Vouchers generally come with a PIN. PINs validate the voucher by number.

Note: Voucher PINs are different from Bad-PIN counts for credit cards.

For more information about how PINs are generated and checked, see *CCS Technical Guide*.

Generating GPG keys

A public and private GPG key can be generated from a pass-phrase. The private key is held only by the print shop and used only to decode the encrypted batch file. The public key is used to encrypt the file and must therefore be supplied to the operator who will be responsible for generating the voucher batch file.

For more information about using GPG keys with exported files, see *Print Shop Operations Guide*.

CB-10 voucher security

If CB-10 voucher security functionality is installed and activated on your system and the HRNGEN private keys and SHA hash keys are generated, you can use CB10 and CB10 HRN encryption when creating voucher batches. The authentication rules for generating CB10 and CB10 HRN encryption parameters are configured on the **Security** tab on the CCS Service Management screen.

Note: For more information about CB10 authentication rules, see *CCS User's Guide*. For more information about enabling the CB10 voucher security feature, see *Installation Guide*.

Power Charge Scenarios

A scenario is an alternative set of multiple balances that is associated with a voucher type. When a voucher is redeemed, a subscriber can select a particular scenario from the different options available for redeeming the voucher.

Note: It is possible for a scenario to increment a balance, or extend the expiry date for the balance, or both.

Examples of scenarios

A single voucher can be redeemed in multiple ways, depending on the options available at redemption. The subscriber is presented with a list of scenarios and prompted to select one.

For example, a voucher can be redeemed one of the following ways:

- 120 minutes of international calling (180 minutes during a special promotion)
- 200 short messages made within a 30 day period (300 SMS during a special promotion)
- Gold customers will receive an additional 10% on their chosen option

Redemption rules

Scenarios are applied and redeemed according to the following rules:

- The default scenario value ‘0’ will always be applied in addition to any selected scenario.
- The scenario name selected by the subscriber must match a scenario defined against the voucher type for the recharge to occur.
- If only one scenario exists against the voucher type, no scenario needs to be selected.

Redemption notifications

When a subscriber's account is changed due to a voucher being redeemed, a real-time wallet notification is sometimes sent to the subscriber's handset. For more information about wallet notifications, see Real-Time Wallet Notifications.

For vouchers which are redeemed with a scenario, a notification template must be configured for each scenario. The notification template is selected by matching the scenario number to the digit on the end of the notification template name.

Example: For a basic recharge notification with two scenarios, the following two notifications must be configured:

- BasicRecharge1
- BasicRecharge2

14

Voucher Management

This chapter explains how to create and manage vouchers.

This chapter contains the following topics.

Voucher Manager Module

Voucher Type

Voucher Batches

Vouchers

Voucher Validation

Voucher Recharge

Voucher Ranges

GPG Public Keys

AVD Configuration

Voucher Manager Module

The Voucher Management screen allows you to configure vouchers. It contains these tabs:

- Voucher Type
- Voucher Batches
- Vouchers
- Voucher Validation
- Voucher Ranges
- GPG Public Keys
- AVD Configuration

Accessing the Voucher Manager screen

Follow these steps to open the Voucher Manager screen.

1. Select the **Services** menu from the SMS main screen.

   Note: The services which are available under the **Services** menu depend on the components which have been installed, and the permissions of the user. The services displayed in this screen shot may not match the services you have available on your system.

2. Select **Voucher Manager**.

   Result: You see the Voucher Manager screen.

Voucher Type

The **Voucher Type** tab allows you to add, modify, or delete voucher types.

The voucher type determines the tariff plan, the restriction control plan, and the value of the calls for which recharges (including vouchers) are valid.

For each voucher type, you can:

- Define a limited list of available product types, see Limited Product Type
- Define product swap rules, see Product Swap
- Define multiple balance types, see Multiple balance type
- Associate tax plans to voucher type recharges, see Tax Plan
- Define power charge scenarios, see Power charge scenarios

Voucher types define core details and restrictions for recharges such as vouchers and the balance increase part of credit transfers.

For more information about redeeming vouchers, see Vouchers Introduction. For more information about credit transfers, see Transfer Management.

Limited Product Type

You can define a limited list of product types a voucher type can recharge. This can be used to target customers with specific product types.

Product Swap

You can define a set of product swap rules which are executed when the recharge is redeemed.

You define a product swap rule by specifying the product type to change from, and the product type to change to. When the voucher is redeemed, wallets assigned to the 'From' product type are changed to the matching 'To' product type.

If you limited the product types that could be recharged, you can only choose the 'From' product type from the limited set. Otherwise, you can choose from all the available product types for the current service provider. The list of available product types to swap to is determined by the product type swap configuration set up in the Subscriber Management screen.

Multiple balance type

You can add more than one balance type to a voucher type. When a recharge or voucher is redeemed, all balance types associated with the voucher type are recharged. This can include both monetary balance types (such as general cash or promotional cash) and non-monetary balance types (such as free SMS or time). You can add more than one entry for the same balance type, with different details for each entry, including:

- Unique expiry dates and extension policies
- The period during which this balance type entry can be recharged

- The product types for which this balance type entry can be recharged

Tax Plan

You can associate a tax plan to a voucher recharge or voucher type recharge. A single tax plan can be optionally associated with each balance of a voucher type. This tax plan applies only to the cash amount.

If an inclusive tax plan is associated with the voucher, the tax component of the cash value is deducted from the voucher before crediting the account. Exclusive tax plans associated with a voucher balance will cause the full amount of the voucher to be credited to the account.

EDRs generated from voucher recharges will show the cash amount credited to the account and the tax component.

Example 1:

Consider a voucher defined for $11 and 200 SMSs. If the tax plan is inclusive with a tax definition of 10%, then the user is credited with $10 and the 200 SMSs. The EDR will report the $10 credit and the $1 tax.

Example 2:

Consider a voucher defined for $10 and 200 SMSs. If the tax plan is exclusive with a tax definition 10%, then the user is credited with a total of $10 and 200 SMSs. The EDR will report the $10 credit and the $1 tax.

Power charge scenarios

You can associate recharge scenarios to a balance type for a voucher type. The voucher type can then be redeemed in multiple ways depending on the scenario options available when it is redeemed. Scenarios can include both monetary balance types, such as general cash or promotional cash, and non-monetary balance types, such as free SMS or time. You can do one or more of the following:

- Increment a balance
- Extend the expiry date for the balance

Note: The scenarios functionality will only be available in the screens if it has been activated. For more information about activating scenarios, see *CCS Technical Guide*.

Voucher Type fields

The following table describes the function of each field.

Field	Description
Name	A unique name for the voucher type. **Note:** If this voucher type uses scenarios and you will be sending real-time wallet notifications for recharges, this field must be reflected in the name of the template you use for the notification. For more information about the required format, see *CCS Technical Guide*.

Field	Description
CDR Description	The description to use for EDRs which are produced by vouchers with this voucher type. **Tip:** You can use a maximum of 100 characters.
Description	A brief description of the voucher type.
Pre-use Expiry Period	The period (in days and hours) between this voucher being issued and when it will expire. **Example:** If a voucher has a pre-use expiry period of seven days, the holder of the voucher has seven days from the date of issue to begin using the voucher. If not used in seven days, the voucher expires and is no longer valid.
Wallet Expiry Period	The period (in days and hours, or months, depending upon the `Expiry Period Type`) between the wallet being activated and when it will expire. **Tip:** The `expireAtMidnight` configuration parameter in **eserv.config** overrides the displayed hour for expiry and will expire the wallet only at midnight on the expiry date. For further information about this configuration option, see *VWS Technical Guide*.
Expiry Period Type	The unit the wallet expiry period is calculated in. Select either: • Hours – the wallet expiry is calculated in days and hours • Months – the wallet expiry is calculated in months
Wallet Expiry Policy	Which date to calculate the wallet expiry period from. Select either: • Best – extends expiry from the date the voucher is redeemed (this will only apply if there is a positive effect). • Extend – extends expiry from the current expiry date.
Limited Product Types	The product types which can use vouchers with this type.
Product Swap Rules	When a voucher is redeemed, the subscriber's existing product type can be changed to a new product type. Subscribers with the product type in the **From** column are changed to the product type in the **To** column in the same row when vouchers with this type are redeemed. If no rules are set, the subscriber will continue to have their existing product type.

Field	Description
Scenario	The scenarios to associate with the balance type when the voucher is redeemed. **Tip:** You can add multiple scenarios to the same balance type by adding different scenario values. You can also edit/delete the default scenario. **Note:** This panel will only be visible on the tab if the scenarios functionality has been activated. For more information about activating scenarios see *CCS Technical Guide*.
Multi-Balances	The details of the changes vouchers with this type make to balance types when the voucher is redeemed. For more information about the fields in these records, see Multi-Balance fields. **Tip:** You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

Adding voucher types

Follow these steps to add a new voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.
2. From the **Voucher Type** tab, click **New**.

   Result: You see the New Voucher Type screen.
3. Start to configure this record by entering data in the fields in the top left of this screen. For more information about the fields on this screen, see Voucher Type fields.
4. If you want to limit the available product types for the voucher type, add the product types which can use vouchers with this type. For more information about adding product types to this list, see Adding limited product types.
5. If you want to define product swap rules for the voucher type, add the product type swap rules you want to apply when vouchers of this type are redeemed to the Product Swap Rules list. For more information about adding these rules, see Adding product swap rules.
6. If the Scenario panel is visible in the screen, then add the scenarios to associate with the balance type when vouchers of this type are redeemed. For details, see Adding scenarios to a voucher type.

   Tip: You can add multiple scenarios to the same balance type by adding different scenario values.

   Note: The Scenario panel will only be visible in the screen if the Scenarios functionality has been activated on your system.
7. Add the balance types that this type of voucher recharges when it is redeemed. For details, see Adding balance types to a voucher type.

Tip: You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

8. Click **Save**.

Related topic

Voucher Type

Adding limited product types

Follow these steps to add a product type to the limited product types list on the New or the Edit Voucher Type screen.

1. In the **Limited Product Types** area, click **Add**.

   Result: You see the Add Limited Product Type screen.

2. From the **Product Type** drop down list, select the product type you want to add to the list.

3. Click **Save**.

   Result: The product type is added to the limited products list and you are returned to the Voucher Type screen.

Related topic

Voucher Type

Editing limited product types

Follow these steps to edit a product type in the limited product types list on the New or the Edit Voucher Type screen.

1. In the **Limited Product Types** area, select the product type from the list and click **Edit**.

   Result: You see the Edit Limited Product Type screen.

2. In the **Product Type** drop down list, select the new product type you want to add to the list.

3. Click **Save**.

   Result: The product type in the limited products list is updated and you are returned to the Voucher Type screen.

Related topic

Voucher Type

Adding product swap rules

Follow these steps to add a product swap rule to the product swap rules list on the New or the Edit Voucher Type screen.

1. In the **Product Swap Rules** area, click **Add**.

   Result: You see the Add Product Swap Rule screen.

2. From the **From** drop down list, select the product type to swap from.

3. From the **To** drop down list, select the product type to swap to.
4. Click **Save**.

   Result: The product swap rule is added to the list of rules and you are returned to the Voucher Type screen.

Related topic

Voucher Type

Editing product swap rules

Follow these steps to edit a product swap rule in the product swap rules list on the New or the Edit Voucher Type screen.

1. In the **Product Swap Rules** area, select the swap rule and click **Edit**.

   Result: You see the Edit Product Swap Rule screen.
2. From the **From** drop down list, select the product type to swap from.
3. From the **To** drop down list, select the product type to swap to.
4. Click **Save**.

   Result: The product swap rule in the list of rules is updated and you are returned to the Voucher Type screen.

Related topic

Voucher Type

Editing voucher types

Follow these steps to edit an existing voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.
2. On the **Voucher Type** tab, select the record to edit.
3. Click **Edit**.

   Result: You see the Edit Voucher Type screen. For information about voucher type fields, see Voucher Type fields.
4. Make the changes that you need to by editing the fields in this screen.
5. In the **Limited Product Types** area, to:
   - Add a product type to the list, click **Add**. See Adding limited product types.
   - Edit a product type already in the list, select it in the Product Type list,and click **Edit**. See Editing limited product types.
   - Remove a previously selected product type, select it in the Product Type list, click **Delete**, and then click **Yes** to confirm the deletion.
6. In the **Product Swap Rules** area, to:
   - Add a product swap rule to the list, click **Add**. See Adding product swap rules.
   - Edit a product swap rule already in the list, select it in the From/To list, and click **Edit**. See Editing product swap rules.

- Remove a previously selected product swap rule, select it in the From/To list, click **Delete**, and then click **Yes** to confirm the deletion.

7. Add the scenarios to associate with the balance type when vouchers of this type are redeemed. For details, see Adding scenarios to a voucher type.

   Tip: You can add multiple scenarios to the same balance type by adding different scenario values.

8. Add the balance types that this type of voucher recharges when it is redeemed. For details, see Adding balance types to a voucher type.

   Tip: You can add multiple balance types to the same voucher type and you can specify the product type for each balance type. You can include the same balance type more than once.

9. Click **Save**.

Related topic

Voucher Type

Deleting voucher types

Follow these steps to delete an existing voucher type.

1. In the Voucher Management screen, select the **Service Provider** from the drop down box.
2. In the table on the **Voucher Type** tab, select the record to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK** to delete the record from the database.

   Result: The record is deleted and you see the Voucher Type prompt.

5. Click **OK**.

Adding scenarios to a voucher type

Follow these steps to add a scenario to the scenario list on the New or Edit Voucher Type screens.

1. In the **Scenario** area, click **Add**.

   Result: The New Scenario window is displayed.

2. From the **Scenario ID** drop down list, select the scenario number to associate to the scenario.
3. In the **Scenario Name** field, enter a name for the scenario.
4. In the **Recharge Classification** field, enter a description for how the recharge will be made.
5. Click **OK**.

   Result: You are returned to the New/Edit Voucher Type screen and the new scenario is added to the list of scenarios.

Related topic

Voucher Type

Editing scenarios for a voucher type

Follow these steps to edit a scenario in the scenario list on the New, or Edit Voucher Type screen.

1. In the New or Edit Voucher Type screen, select the scenario to edit.
2. In the **Scenario** area, click **Edit**.

   Result: The Edit Scenario screen is displayed.
3. Edit the details as required. See Adding scenarios to a voucher type for field details.
4. Click **OK**.

Related topic

Voucher Type

Deleting scenarios for a voucher type

Follow these steps to delete a scenario in the scenario list on the New, or Edit Voucher Type screen.

1. In the New or the Edit Voucher Type screen, select the scenario to delete.
2. Click **Delete**.

   Result: The record is deleted from the list of scenarios.

Related topic

Voucher Type

Multi-Balance fields

This table describes the function of each field.

Field	Description
Action	Provides three actions: • **Recharge** – The recharge value is added to the current balance value • **Replace Balance** – The recharge value replaces the current balance value • **Reload Counter** – The balance value is a counter for the number of reloads of the selected balance type
New Bucket	Whether to create a new bucket for the balance type when the voucher is redeemed.
Balance Type	The balance type to recharge when vouchers of this type are redeemed. This field is populated by the records on the Balance Types tab. **Note:** Any valid balance type can be selected. This includes non cash balance types, such as time.

Field	Description
Value	The amount to recharge the balances of the balance type selected in the **Balance Type** field.
Expiry Policy	How to apply the expiry period for this balance type when vouchers of this type are redeemed. Select: • **Best** – The system selects the best policy option for the subscriber depending on their particular circumstances. • **Extend** – The current expiry period is extended by the specified days and hours. • **Ignore** – No change is made to the current expiry period. • **Extend From Today** – The current expiry period to be extended the specified number of days and hours from today's date. The following fields exist when the `jnlp.ECEExtensions` application property is true. These fields are only applicable when using an ECE charging domain. Select: • **First Use with Offset** – The expiry is set a number of months or hours after the first use of the balance • **First Use** – Account Cycle – The expiry is set to the date of the first use of the balance, plus a number of account cycles • **First Use** – Bill Cycle – The expiry is set to the date of the first use of the balance, plus a number of billing cycles
Expiry Period Type	The unit the balance expiry period is calculated in. Select either: • **Hours** – the balance expiry is calculated in days and hours. • **Months** – the balance expiry is calculated in months.

Field	Description
Balance Expiry Period	The period between when the voucher is activated and when the balance expires. Depending on the selection in the expiry period type options, enter one of: • Days and hours • Months • Cycles (if **First Use- Account Cycle** or **First Use – Billing Cycle** is selected in **Expiry Policy**) **Example:** If a voucher has an expiry period of 30 days, the holder of the voucher has 30 days from the date the voucher is first used to use the outstanding voucher balance. At the end of the expiry period any outstanding voucher balance expires. **Note:** Month expiries set expiry dates measured in calendar months. If a bucket is created on the 31st of the month, and the expiry will be on month which has 30 days or less, the expiry date is set for the 1st of the month after. For example, a two-month bucket created on the 31st of December will expire on the 1st of March. **Tip:** The `expireAtMidnight` configuration option in **eserv.config** overrides the displayed hour for expiry and will expire the balance only at midnight on the expiry date. For further information about this configuration option, see *VWS Technical Guide*.
Credit Available	Select one of the following: • **Now** – Credit is available immediately • **In** – Activates **Dates/Hours** and **Months**, from which you can set when credit becomes available in specified number of days and hours, or months • **On** – Activates the date selector, from which you can set the exact date when credit becomes available **Note:** You can only specify **Credit Available** for chargeable or cross balance types.
Missing Balance Action	What to do, if this balance type does not already exist in the wallet when the voucher is redeemed. Select one of the following: • **Create Balance** – The system creates the balance type and redeem the voucher. • **Fail Recharge** – The voucher redemption fails. • **Skip Balance** – The voucher is redeemed, but the system does not create the balance type.
Tax Plan	The tax plan associated with this voucher type. **Note:** For inclusive tax, the tax component will be removed before crediting the subscriber.

Field	Description
Scenario	The scenario which will apply this balance. **Notes:** • This field will only be visible in the screen if the scenarios functionality has been activated. For more information about activating scenarios, see *CCS Technical Guide*. • Only required if more than one scenario has been defined for this voucher type. • The scenario value '`Default(All)`' indicates that the balance type applies to all scenarios. If scenarios have been defined, you cannot use the default scenario. • If only one scenario has been defined, you do not have to specify a scenario.
Allowed Product Types	The product types which vouchers of this type can recharge for this balance type. **Tip:** An empty **Allocated** list means that the balance type can be recharged for all product types.
Configuration Restriction	Restricts the day, month and year that a balance starts and ends. Select the following: • **Applies From** – Sets the date when balances of this type can be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date. • **Applies Until** – Sets the date when balances of this type can no longer be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date.

Adding balance types to a voucher type

Follow these steps to add a balance type to the current voucher type.

Note: To add multiple balance types to the voucher type, repeat this process as required.

1. In the Multi-Balances area at the bottom of the New or the Edit Voucher Type screen, click **New**.

   Result: You see the New Multi-Balance screen.

2. Start to configure this record by entering data in the fields in the top of this screen. For more information about the fields on this screen, see Multi-Balance fields.

3. In the **Allowed Product Types** section select the Product Types for which the voucher can recharge this balance type. To:

   • Allocate a product type, select it in the **Available** list and click the '**>>**' button

- Remove an allocated product type, select it in the **Allocated** list and click the '**<<**' button.

Tip: An empty **Allocated** list means that the balance type can be recharged for all product types.

4. Click **Save**.

   Result: The balance type details are saved, and you return to the Voucher Type screen.

Related topic

Voucher Type

Editing balance types for a voucher type

Follow these steps to edit an existing balance type for the current voucher type.

1. In the New or Edit Voucher Type screen, select the balance type record to edit from the **Multi-Balances** table.
2. Click **Edit**.
3. Edit the fields to reflect the changes you need to make.

   For more information about the fields in this screen, see Multi-Balance fields.
4. If required, in the **Allowed Product Types** section select the Product Types for which the voucher can recharge this balance type. To:
   - Allocate a product type, select it in the **Available** list and click the '**>>**' button
   - Remove an allocated product type, select it in the **Allocated** list and click the '**<<**' button.

   Tip: An empty **Allocated** list means that the balance type can be recharged for all product types.
5. Click **Save**.

   Result: The modified balance type record is saved, and you return to the Voucher Type screen.

Related topic

Voucher Type

Deleting balance types for a voucher type

Follow these steps to delete an existing balance type from a voucher type.

1. In the New or the Edit Voucher Type screen, select the balance type record to delete from the **Multi-Balances** table.
2. Click **Delete**.

   Result: You see the Delete Multi-Balance prompt.
3. Click **Apply** to delete the record from the database.

Related topic

Voucher Type

Voucher Batches

The **Voucher Batches** tab lets you search, display, create, and delete batches of vouchers for the selected customer.

You use the New Voucher Batch screen to create a simple voucher batch file, eliminating the need to generate the batch from the command line.

Tip: Configuration for the voucher tool used to create voucher batches is defined in **eserv.config**. For more information about **eserv.config**, see *CCS Technical Guide*.

Topics:

Voucher Batch fields

Finding voucher batches

Adding voucher batches

Checking voucher batch status

Editing voucher batches

Deleting voucher batches

Voucher Batch fields

The following table describes the functions of Voucher Batch fields.

Field	Description
Batch Code	The identifier which will be used to group the vouchers in this batch. This field can be used to group vouchers from several batches. **Note:** This field is not available: • On the **Edit Voucher Batch** screen, and cannot be changed after the batch is generated
Batch Id	The batch ID for the voucher batch. This field is automatically populated when the vouchers are first generated. It cannot be changed and is only visible on the **Voucher Batches** tab.
Domain	The domain where the voucher batch was created. This field is only available on the **New Voucher Batch** screen.
Batch Name	The unique name for the batch. It can be up to 50 characters long and is optional.
Activation Date	Activation date of the voucher batch. This field cannot be changed after the batch is activated. **Note:** This field is not available on the **New Voucher Batch** screen.

Field	Description
Voucher Type	The type of the vouchers in this batch. This field is populated by the **Voucher Types** tab. For more information, see Voucher Type. This field cannot be changed after the batch is generated.
Expiry Date	The expiry date of the vouchers in this batch. This field enables you to specify the voucher batch expiry date, which sets a batch to expire on a specific day and shows users that a batch is no longer active and not available for use.
State	Displays the state of the voucher batch. Available states are: • Active • Created • Unavailable • Expired **Note:** This is different to the state of the individual vouchers within the batch. These states are available within the **Voucher Batch Search** screen but not in the **New Voucher Batch** screen.
Description	Reason for the voucher state change. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.

Field	Description
Initial Voucher State	The state new vouchers in a batch will be in when they are first generated. This field allows individual vouchers or ranges of vouchers in a voucher batch to be made **Active** as an additional security feature for service providers. In the **New Voucher Batch** screen a new batch should normally be created with the **Initial Voucher State** set to **Active**. This sets the individual voucher records in the batch to **Active** in the `CCS_VOUCHER_REFERENCE` table. Once the batch has been created, the **Voucher Batches** tab should be used to set the batch status to **Active**. This sets the batch record in `CCS_VOUCHER_BATCH` to **Active** enabling all vouchers in the batch. If a new batch is created with the **Initial Voucher State** set to **Created**, then vouchers can only be redeemed when their state has been reset to **Active** in the **Vouchers** tab (for individual activation) or in the **Voucher Ranges** tab (for a range of vouchers). To enable vouchers, set both the batch state and the voucher state to **Active**. **Note:** This is different to the state of the voucher batch (which is automatically set to **Created** when the batch is first generated. This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.
Voucher Number Length	The number of digits in the voucher number. This is set by the authentication rule for this voucher batch and cannot be changed after the batch is generated. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.

Field	Description
Start Voucher Number	Displays the number of the first voucher in the batch and the starting point for the voucher number range. **Note:** The length of the voucher number must match the voucher number length defined for the authentication rule being used. If the AltAuthMod authentication rule is being used, this will be 14 characters long. A voucher number range can be used more than once for: • DES encrypted vouchers with GPG selected • CB10 HRN encrypted vouchers with or without GPG selected Vouchers are generated from unused voucher numbers from the range. This field cannot be changed after the batch is generated.
End Voucher Number	Displays the number of the last voucher in the batch and the ending point for the number range. The value must be greater than the start of range value and have a matching number of digits. **Note:** This field cannot be changed after the batch is generated.
Start Serial Number	Displays the serial number of the first voucher in the batch. **Note:** This field is automatically populated and cannot be changed after the batch is generated. It is not available on the **New Voucher Batch** screen.
End Serial Number	Displays the serial number of the last voucher in the batch. **Note:** This field is automatically populated and cannot be changed after the batch is generated. It is not available on the **New Voucher Batch** screen.
Batch Size Original Count	The number of vouchers in this batch. This can be equal to or less than the difference between the start voucher number and the end voucher number. **Note:** This field cannot be changed after the batch is generated.
Authentication Rule	Indicates which encryption scheme the voucher batch has been created with. This field cannot be changed after the batch is generated. This list is populated by records from the **Security** tab in the Service Management screen. For more information about the **Security** tab, see *CCS User's Guide*.

Field	Description
GPG Public Key	The GPG Public key to use to encrypt the voucher batch export file. The key must have been imported and verified on the SMS. If you do not want to use a GPG Public key, select the blank entry. **Note:** This field is only available for voucher batch files generated using an authentication rule based on DES PIN encryption or CB10 HRN encryption. This field is only available on the **New Voucher Batch** screen. For more information about GPG public keys, see GPG Public Keys.
Pause Time	The time in seconds to pause after loading each 100 vouchers for writing to the export file. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.
Creation Date	The creation date of the batch.
CDR Description	Description to use for this voucher batch in any EDRs that are created for vouchers from this batch.
Remote Filename	The name of the voucher batch export file to write the details of the generated vouchers to. **Note:** This field is only displayed in the **New Voucher Batch** screen, not in the **Voucher Batch Search** screen.

Finding voucher batches

Follow these steps to search for an existing voucher batch.

1. In the Voucher Manager screen, choose the **Service Provider** from the drop down list.
2. On the **Voucher Batches** tab, enter the search strings you are using to find the required batch. Perform one of the following:
   - Enter the first few characters of the specified batch code in the **Code** field and click **Search**
   - Select the Voucher Batch state from the **State** drop down box and click **Search**

   Note: There are three states:
   - Active
   - Created
   - Unavailable

   Result: The **Voucher Batches** table will display the first 100 records matching the search criteria. Results include creation date.

3. If the required voucher batch is not displayed and more than 100 records were returned, enter a longer search string and click **Search** again.

Adding voucher batches

Follow these steps to add a new voucher batch.

Note: The values for the voucher number length and voucher PIN length are determined by the authentication rule selected and cannot be edited. The **GPG Public Key Description** field is for information only.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. From the **Voucher Batches** tab, click **New**.

   Result: You see the New New Voucher Batch Screen.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Voucher Batch fields.
4. Click **Save**.

   Result: The batch generation process is started and you see the Voucher Batch Generation prompt.
5. Click **OK**.

   Result: You see the Voucher Batch Progress bar. The COMPLETE message is displayed in the bar once the batch has been successfully created.
6. Click '**x**' to close the progress bar.

Related topic

Voucher Batches

Checking voucher batch status

Follow these steps to check the status of an existing voucher batch.

1. Read the ccsSmsORB output log. For more information about the ccsSmsORB, see *CCS Technical Guide*.
2. Check for any error messages from the actual voucher-creation process.
3. Go to the **/IN/service_packages/CCS/voucher/export/** directory.
4. Check that the following file exists:

   remote_filename **.lst.print**

   Where**:**

   remote_filename is the name entered in the **Remote Filename** field of the New Voucher Batch screen.
5. If the file exists, is larger than 0 bytes in size and contains full records, the voucher batch job has been created successfully.

   If the file does not exist, is 0 bytes in size or only contains headers, the voucher batch job has failed. You will need to repeat the procedure in Adding voucher batches.

Editing voucher batches

Follow these steps to edit an existing Voucher Batch.

Note: The **Voucher Batch, Edit Voucher Batch, and Vouchers** tabs have a creation date read-only value which preserves the creation date when a batch is edited.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. On the **Voucher Batches** tab enter the search criteria for the required voucher batch in the search fields and click **Search**. For details on finding voucher batches, see Finding voucher batches.
3. In the table on the tab, select the record you want to edit and click **Edit**.

   Result: You see the Edit Voucher Batch Screen.
4. Edit the fields with the changes to make.

   You can update only the following fields:

   - **CDR Description**
   - **Voucher Batch Status**

   Tip: For descriptions of voucher batches fields, see Voucher Batch fields.
5. Click **Save**.

Related topic

Voucher Batches

Deleting voucher batches

Follow these steps to delete an existing voucher batch.

1. In the **Voucher Manager** screen, select the service provider from the **Service Provider** list.
2. On the **Voucher Batches** tab enter the search criteria for the voucher batch to delete and click **Search**.

   For more information about finding voucher batches, see Finding voucher batches.
3. In the table on the tab, select the record to delete.

   Note: Selecting **Delete** on an active batch will calculate if the batch is stale. Only active batches that are stale and unavailable batches can be deleted.
4. The **Delete Voucher Batch** prompt displays. Confirm your desire to delete the voucher batch by clicking **OK**.

   Result: The voucher batch is deleted.

Related topic

Voucher Batches

Vouchers

The **Vouchers** tab allows you to view details of a voucher, change its status, and set voucher expiry.

The **Vouchers** tab has the following subtabs:

- Voucher
- Batch
- Subscriber
- Info
- History

Voucher

The **Voucher** subtab enables you to:

- View details of a voucher
- Change voucher status
- Set voucher expiry

Voucher fields

The following table describes the Voucher subtab fields.

Field	Description
Voucher Number	The voucher number.
Serial Number	The voucher serial number.
Private Secret	Encrypted voucher HRN or PIN.
Voucher Type	The type of the voucher in this batch. This field is populated by the **Voucher Types** tab.
Voucher Created	The voucher creation date.
Archive Date	The calculation date when archiving may take place.
Voucher Status	The status of the voucher. The available statuses are: • Active • Created • Frozen • Deleted

Field	Description
Voucher Expiry	The expiry date of the voucher. This field enables you to set a voucher to expire on a specific day. If an expiry date is already set for a voucher, this field displays the date and time when the voucher expires. You can set the date by clearing the **Remove** check box. **Note**:This field is enabled only if the **Remove** check box is cleared. By default, the **Remove** check box is selected.
Description	Additional information about the voucher state change or the voucher expiry date change.
Last State Change User	User name of the user who last changed the voucher state.

Changing voucher states

You can select a voucher owned by the selected service provider and set it to an 'active' or 'frozen' state.

In an 'active' voucher batch, if you set a voucher to the 'frozen' state, then the voucher can no longer be redeemed. If a voucher batch is in a 'created' or 'unavailable' state, then although you will be able to set a voucher within the batch to an 'active' state in this screen, you will not be able to redeem it. You may only redeem an active voucher if the voucher batch it belongs to is also in an 'Active' state.

Follow these steps to change the state of an existing voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the **Vouchers** tab, enter one of the following:
   - Voucher number or HRN in the **Voucher Number** field
   - Voucher serial number in the **Serial Number** field

   Click **Search**.

   Tip: When searching on the voucher number, the number entered must be the length of the voucher number as defined for the authentication rule for this voucher.

   Result: The **Voucher** subtab displays the details for the voucher searched for.
3. In the **Voucher** subtab, from the **Voucher Status** drop down box, select the status.

   Available statuses are:

   - Active
   - Frozen

   Note: If you want to be able to redeem the voucher, set the status to `Active`.

   If the voucher has been redeemed already:

   - This field is grayed out (indicating the value cannot be changed)

- The status will be `Used`

If the voucher has been deleted, this field is grayed out (indicating the value cannot be changed).

4. Click **Save**.

Setting voucher expiry

You can set a voucher to expire on any specific day beyond which it is not available for use.

Follow these steps to set an expiry date for a voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the **Vouchers** tab, enter one of the following:
   - Voucher number or HRN in the **Voucher Number** field
   - Voucher serial number in the **Serial Number** field
3. Click **Search**.

   Tip: When searching on the voucher number, the number entered must be the length of the voucher number as defined for the authentication rule for this voucher.

   Result: The **Voucher** subtab displays the details for the voucher searched for.
4. In the **Voucher** subtab, in the **Voucher Expiry** field, clear the **Remove** check box and click the date chooser icon.

   Result: The **Date Chooser** window is displayed.

   Note: The **Voucher Expiry** field is disabled if the **Remove** check box is selected. By default, the **Remove** check box is selected.
5. In the **Date Chooser** window, select a date and time when you want the voucher to expire.
6. Click **Save**.

Batch

The **Batch** subtab displays information related to voucher batches. It provides information about batch ID, batch name, batch state, and batch expiry.

Batch fields

The following table describes the Batch subtab fields.

Field	Description
Batch Name	The name of the voucher batch. This can be up to 50 characters long.
Batch ID	Unique ID for the voucher batch.
Batch Code	The batch code for the voucher batch that includes this voucher.

Field	Description
Batch State	The state of vouchers in the voucher batch. The batch states are: • Active • Created • Unavailable
Batch Activated	Activation date of the voucher batch.
Batch Expiry	The expiry date of the vouchers in this batch. This field enables you to specify the voucher batch expiry date, which sets a batch to expire on a specific day and shows users that a batch is no longer active and not available for use.

Subscriber

The **Subscriber** subtab displays voucher redemption, wallet reference, subscriber ID, and scenario information for a voucher.

Subscriber fields

The following table describes the Subscriber subtab fields.

Field	Description
Voucher Redeemed	The voucher redemption date.
Wallet Reference	The wallet reference of the redeeming wallet.
Subscriber ID	The ID of the subscriber redeeming the voucher.
Scenario	The voucher scenario used to redeem the voucher. **Note:** This field is visible only if scenarios have been installed and activated on your system. For more information about installing and activating scenarios, see *CCS Technical Guide*.

Info

The **Info** subtab displays details about distributor and retail channel and other additional information about a voucher.

Note:

The fields in **Info** subtab are editable only if the following conditions are met:

- The voucher status needs to be in active, created, or frozen state.
- The **Info** subtab needs to have CreateDelete or ReadModify permissions. You can modify the permissions under **User Management > Template Creation > CCS > Voucher Info Subtab**.

Info fields

The following table describes the Info subtab fields.

Field	Description
Barcode	The barcode number of the voucher. You can use a maximum of 12 digits.
Text	Description of the voucher. You can use a maximum of 50 characters.
Card Design	Version number of the voucher design. You can use a maximum of 4 digits.
Distributor Channel	Distributor of the voucher. You can use a maximum of 50 characters.
Retail Channel	Retailer of the voucher. You can use a maximum of 50 characters.
Provisioning Date	Date on which the voucher is created.
Free Text Field_1	Field for capturing business process information. You can use a maximum of 50 characters.
Free Text Field_2	Field for capturing business process information. You can use a maximum of 50 characters.
Free Text Field_3	Field for capturing business process information. You can use a maximum of 50 characters.

History

History subtab displays the history of changes made for that particular voucher.

History fields

This table describes the History subtab fields.

Field	Description
Date	Date when the voucher was modified.
Term	The host that modified the voucher.
User	User name of the user who made the changes.
Type	Type of the operation performed. Types are: • V: Voucher Recharge • S: Voucher State change • E: Voucher Expiry change • B: Both Voucher Expiry and Voucher State change
Description	The description of the changes made.

Voucher Validation

Use the **Voucher Validation** tab to test whether a given voucher signature (the voucher number and secret digits) is valid.

Note: You will only have access to this facility if you have sufficient user privileges.

Validating a voucher

Follow these steps to validate a voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the **Voucher Signature** field in the **Voucher Validation** tab, enter the voucher number or HRN. Do not include any spaces.

   Tip: The voucher number to use for searching must be the length of the voucher number as defined for the authentication rule for this voucher.
3. Click **Validate**.

   Result: The Voucher Status field shows the validity of the voucher.

Voucher validation results

This table lists the possible messages displayed when you validate a Voucher.

Message	Description
`No Voucher to Check`	You clicked **Validate** before entering the voucher signature.
`Voucher Is Valid`	The signature has been confirmed by the SMS.
`Voucher Is Not Valid`	The signature was not recognized by the SMS.

Voucher Recharge

The **Voucher Recharge** tab allows you to recharge a voucher owned by the selected service provider.

Recharging vouchers

Follow these steps to recharge an existing voucher.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the **Voucher Signature** field on the **Voucher Recharge** tab, enter the signature of the voucher you want to recharge.

   Note: The voucher signature is the voucher number and the HRN. For legacy vouchers, voucher signature is the voucher number and (depending on the encryption algorithm selected for the voucher batch) the PIN, or the HRN.

   For more information about encryption algorithms, see *CCS Technical Guide*.
3. In the **Subscriber ID** field, enter the ID for the subscriber.

4. In the **Description** field, enter a reason for the recharge, if required.
5. If a scenario is required, click **Refresh**.

   Result: The **Scenario** drop down list will be populated with all valid scenarios for the voucher specified in the Voucher Signature field.
6. From the **Scenario** drop down list, select the scenario to use with this redemption.
7. From the **Primary** and **Secondary** option buttons, select the wallet type for the Voucher Recharge.
8. Click **Recharge**.

   Result: The system will attempt to recharge the subscriber with the voucher. If it is successful, the Success prompt will appear.
9. Click **OK**.

Voucher Ranges

The **Voucher Ranges** tab enables you to change the state of a group of vouchers. The vouchers are a defined range of voucher numbers.

Activating voucher ranges

Follow these steps to change the state of a range of vouchers.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. On the **Voucher Ranges** tab, from the **Voucher Batch** drop down list, select the voucher batch which contains the range to change.

   Note: The voucher batch corresponds with the **Batch ID** field in the Voucher Batches screen.
3. From the **Voucher State** drop down list, select the new state the vouchers in the range should be.

   Note: If you want to be able to redeem the vouchers you must set the voucher state to active.
4. In the **Start Serial No** field, enter the lowest voucher serial number in the voucher range you want to change.
5. In the **End Serial No** field, enter the highest voucher serial number in the voucher range you want to change.

   Note: The range must be 100,000 vouchers or less.
6. In the **Description** field, enter a description for the voucher range, if required.
7. Click **Change**.

   Result: The Confirm Voucher Change Operation prompt will appear.
8. Click **OK**.

   Result: The Voucher Change State prompt will appear.
9. Click **OK**.

GPG Public Keys

The **GPG Public Keys** tab allows you to:

- Import new GPG public keys into CCS
- Verify imported keys

GPG keys are used to increase security when creating voucher batch export files for printing.

Once a public key has been verified it can be used as part of the security mechanism for creating voucher batches.

Note: You cannot remove public keys from the SMF database or from the GPG key-ring store on the SMS.

Importing GPG public keys

Follow these steps to import new GPG public keys from a specified file.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. Select the **GPG Public Keys** tab.
3. In the **Import File** field, enter the path and filename of the file containing the new GPG public keys or click **Browse** to select the file.
4. Click **Import Keys**.

   Note: This button becomes enabled once the import file has been specified.

   Result: Any keys not currently in the system are imported from the file and you see the GPG Key Importation prompt.
5. Click **OK**.

   Result: The **GPG Public Keys** tab is refreshed to include the new keys.

Verifying public keys

Follow these steps to verify a GPG public key.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the table on the **GPG Public Keys** tab, select the GPG Key to verify.

   Tip: If the value in the **Verified** column for this key is 'Y', then it has already been verified.
3. Click **Verify Key**.

   Result: You see the GPG Key Importation validation prompt.
4. Click **OK**.

Deleting GPG public keys

Follow these steps to delete GPG public keys.

1. In the Voucher Manager screen, select the **Service Provider** from the drop down box.
2. In the table on the **GPG Public Public Keys** tab, select the public key to delete.
3. Click **Delete**.

   Result: The Confirmation prompt appears.
4. Click **OK** to confirm.

AVD Configuration

The **AVD Configuration** tab allows you to:

- Update the common configuration that will be used on the SMS and across all VWS voucher domains by the automatic voucher delete process.
- View the date ranges for vouchers that are in the process of being deleted for each of the configured VWS domain nodes.

Notes:

- Automatic voucher deletion (AVD) is performed on a regular basis by the ccsBeAvd binary processes. For information about ccsBeAvd, see *CCS Technical Guide*.
- You manage the configuration of ccsBeAvd from the **AVD Configuration** tab. This tab also lists the current tasks that the ccsBEAvd binary processes are required to perform. However, it does not show the progress of the deletion of the redeemed vouchers from the VWS domain nodes.

AVD Configuration fields

This table describes the configuration fields in the **AVD Configuration** tab.

Field	Description
Keep Redeemed Vouchers For	Sets the number of weeks for which redeemed voucher records will be kept on the SMS and VWS nodes. Must be between 1 and 26 weeks.
Archive Frozen Vouchers	Globally archives frozen vouchers.
Max Records to Process	Sets the maximum number of voucher records to delete per run of the automatic deletion process (ccsBeAvd) on the VWS. Must be between 1 and 999999. **Note:** The frequency and times that the ccsBeAvd process is run on each VWS node is controlled by the crontab for the ccs_oper user. For more information, see *Charging Control Services Technical Guide*.

Field	Description
Commit After Num Rows	Sets the number of redeemed voucher records for ccsBeAvd to delete on the VWS node before committing the changes to the database. You must specify a value between 1 and 9999. If the value you specify is • Less than the value for **Batch Size**, then ccsBeAvd commits the changes after deleting the number of vouchers defined by **Batch Size**. • More than the value for **Batch Size**, then ccsBeAvd continues to delete batches of voucher records until the value of **Commit After Num Rows** is exceeded. Then it commits the changes to the database. **Note:** It is not possible to roll back changes once they have been committed.
Batch Size	Sets the maximum number of redeemed voucher records to delete in a single batch. You must specify a value between 1 and 999999.
Sleep Time	Sets the amount of time (in seconds) for ccsBeAvd to wait after the number of vouchers defined by **Batch Size** are deleted. You must specify a value between 1 and 999999 seconds. **Note:** This allows the system processing time for other jobs.

Node Status fields

The **Node Status** table on the **AVD Configuration** tab lists the deletion tasks currently under progress by the automatic deletion process on each VWS node. If there are no entries it means that currently there are no vouchers to delete on any VWS node.

This table describes the fields listed in the **Node Status** table.

Note: These fields are read-only and cannot be changed. The values in these fields are updated automatically by the automatic voucher deletion process.

Field	Description
Domain Name	The voucher domains that are currently undergoing automatic voucher deletion processing. **Note:** You configure domains on the Domain tab in the Service Management screen. See the Service Management chapter in *CCS User's Guide* for details.
Node Name	The defined domain nodes from which voucher records to be deleted.
Redeem Start Date	The start date of the date range for which redeemed vouchers to be deleted.
Redeem End Date	The end date of the date range for which redeemed vouchers to be deleted.

Field	Description
Voucher Batch	The batch IDs of the the voucher batch to be deleted.
Voucher Serial	The serial number of the first voucher in each batch to be deleted.

Changing AVD configuration

Follow these steps to change AVD configuration.

1. In the Voucher Manager window, click on the **AVD Configuration** tab.

   Result: You see the current AVD configuration details. See AVD Configuration tab.
2. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this tab, see AVD Configuration fields.
3. Click **Save**.

15
CCS Reports

This chapter explains how to perform CCS reports.

This chapter contains the following topics.

Running CCS Reports

CCS Reports

Running CCS Reports

CCS provides a series of reports which enable operators to report on system activity. These reports are managed and run using the **Reports Function** screen.

Accessing the Report Functions menu

For instructions about how to access the Report Functions menu and how to use the reporting options, refer to the "The Report Functions" chapter in the *SMS User's Guide*.

Date ranges

The following EDR-based reports all have start and end date parameters:

- Product Type Utilisation
- Product Type Duration
- Product Type Recharge
- Reward Application Report
- Subscriber State Change
- Voucher Redemption

The start date specifies the beginning of the date range and is inclusive.

The end date specifies the end of the date range and is exclusive.

For example, 1/3/2006 – 1/4/2006 will include all EDRs in March, but none from April.

Date formats can be one of the following:

- `YYYYMMDD`
- Relative dates

Relative dates

To schedule periodic reports, a date range relative to the current date can be specified by using one of the following formats:

- `9991MMDD`

MM and DD specify a number of months and days to go back from today's date

- `9992MMDD`

  MM and DD specify a number of months and days to go back from the start of the current month

Examples

Daily report: To report on the previous day:

- Start date: `99910001`
- End date: `99910000`

Weekly report: To report on the previous week:

- Start date: `99910007`
- End date: `99910000`

Monthly report: To report on the previous month:

- Start date: `99920100`
- End date: `99920000`

CCS Reports

Unit values all reports

For any reports:

- Monetary values are reported in system major currency; for example, US $1.10 is reported as **1.10** where the currency base is 100 and the number of decimal places is 2.
- Dates are reported in YYYYMMDDHHMMSS format.
- Time values are reported in hundredths of seconds (1/100 seconds).
- SMS values are reported in numbers of SMS messages.

Note: Time values are stored in the database in hundredths of seconds, however, the PI outputs, and the UI displays time values in seconds.

Customer Care Audit

The Customer Care Audit report provides basic reporting detailing potentially suspicious account activity based around user screen operations.

This report uses the following EDR types to collate the information:

- 2 Operator Update
- 3 Account Delete
- 4 Recharge
- 8 Freeform Recharge
- 9 Credit Card Recharge

- 10 Freeform Voucher
- 33 Bad PIN
- 48 Voucher Update

The Generate Report screen has several optional fields that may be used to restrict the report information.

Notes:

- If either the “USER” or “MSISDN” fields are provided, the “Transaction Threshold” parameter will additionally limit the reporting information to the User Agent/ specified MSISDN combinations which exceed the threshold activity limit during the reporting period for all screen initiated operations.
- If “Transaction Threshold” is specified without “USER” or “MSISDN” values then the report will report only on those User Agents/MSISDN combinations which have breached the threshold activity limit during the reporting period.
- If the "Terminal" parameter is specified then the report will be based on values for the terminal whose ip address is specified. The ip address can include wildcards.
- The optional parameters may be used in any combination to generate the required report.
- The report will collate the results and group by User Agent and then MSISDN.
- The report may be run multiple times in parallel with various parameter combinations.
- If scheduling the report it will be possible to specify the period of the report without setting dates (for example: last 2 months, last 2 weeks).
- If there is no activity for a User Agent then the User Agent will not be reported upon.

Report example 1

Customer Care Report with optional MSISDN set.

PrePaid Charging - Customer Care Audit Report

==========

Reporting Period: January 2008 - January 2008

User Agent : All

MSISDN : 441234567890

Threshold : 0

JANUARY 2008

USER: ACS_ADMIN

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 1 0 0 0

------ ------- -------- ----------- ---------

Sub-total: 1 0 0 0

USER: ADMINISTRATOR

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 0 1 1 0

------ ------- -------- ----------- ---------

Sub-total: 0 1 1 0

USER: ALEX

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 0 0 0 0

------ ------- -------- ----------- ---------

Sub-total: 0 0 0 0

USER: CCS_ADMIN

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 0 0 0 1

------ ------- -------- ----------- ---------

Sub-total: 0 0 0 1

====== ======= ======== =========== =========

Total: 1 1 1 1

Report example 2

Customer Care Report with no optional parameters set.

PrePaid Charging - Customer Care Audit Report

==========

Reporting Period: 2 January 2008 - 3 January 2008

User Agent : All

MSISDN : All

Threshold : 0

JANUARY 2008

USER: ACS_ADMIN

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 3 0 0 0

441234567891 0 2 0 0

441234567892 8 0 2 0

441234567893 7 0 1 2

------ ------- -------- ----------- ---------

Sub-total: 18 2 3 2

USER: ADMINISTRATOR

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

441234567890 0 0 0 4

441234567894 0 0 2 0

------ ------- -------- ----------- ---------

Sub-total: 0 0 2 4

====== ======= ======== =========== =========

Total: 18 2 5 6

Report example 3

Customer Care Report with optional Terminal set.

PrePaid Charging - Customer Care Audit Report

==========

Reporting Period: 1 January 2008 - 31 January 2008

User Agent : All

MSISDN : All

Threshold : 0

Terminal : 192.168.24.57

JANUARY 2008

User Agent : SU

Terminal : 192.168.24.57

MSISDN All Standard Adjustments Reversals

====== ======= ======== =========== =========

3214123 1 1 0 0

448888 12 12 0 0

448889 1 1 0 0

User Agent : SU

------ ------- -------- ----------- ---------

Sub-total: 14 14 0 0

====== ======= ======== ========== =========

Total: 14 14 0 0

Promotion Effectiveness Report

This Promotion Effectiveness Report provides statistics on the effectiveness of promotion within the group of affected subscribers (subscribers that received promotion).

Promotion effectiveness is computed by comparing the number of subscribers eligible for the promotion to the number of subscribers who received the promotion.

The effectiveness report includes the following information:

- Promotion name
- Number of subscribers eligible for promotion, calculated when report is run.
- Number of subscribers who received a reward from the promotion, calculated when the report is run.
- Percentage figure indicating the effectiveness.

Example

Prepaid Charging - Promotion Effectiveness Report

==========

Reporting Period: 1 January 2009 - 1 January 2009

JANUARY 2009

Service Name: Boss

==========

Promotion Name Eligible Subscribers Promotions Applied Effectiveness

---------- ---------- ---------- ----------

Monthly >10 Reward then Gen Cash +1 90 0 0 %

Monthly > 20 then Gen cash +1-50 90 0 0 %

sanity test 90 0 0 %

MJH_Reward 90 0 0 %

SL Reward 01 90 0 0 %

SL Reward 02 90 0 0 %

test reward 90 0 0 %

SL Test 90 0 0 %

TP_Promo1 90 0 0 %

SL Test 2 90 0 0 %

SL Test ME 10 90 0 0 %

SL Test ME 20 90 0 0 %

Tony1 90 0 0 %

testmbv-21 90 0 0 %

Activation Credit-106 90 0 0 %

MJH_11-21 90 0 0 %

act test-83 90 0 0 %

Daily Start 21 Expiry 90 0 0 %

Service Name: MigrationSP

==========

Promotion Name Eligible Subscribers Promotions Applied Effectiveness

---------- ---------- ---------- ----------

SL Test 04 with Reward Product 2 0 0 %

MIG_Daily_EXP_010 2 0 0 %

MIG_BV010 2 0 0 %

MIG_BV0101 2 0 0 %

MIG_BV0102 2 0 0 %

MIG_BV0103 2 0 0 %

MIG_BV0104 2 0 0 %

MIG_BV020 2 0 0 %

MIG_BV0201 2 0 0 %

MIG_BV0202 2 0 0 %

SL Test 2 0 0 %

SL Test1 2 0 0 %

SL Test2 2 0 0 %

MIG_Daily_Time_RTR_020 2 0 0 %

MIG_Wallet_SMS_RTR_030 2 0 0 %

MIG_Act_4-109 2 0 0 %

MIG_Act_1-108 2 0 0 %

MIG_Act_2-108 2 0 0 %

MIG_Act_3-108 2 0 0 %

MIG_Credit_4-1564 2 0 0 %

MIG_Credit_1-1567 2 0 0 %

MIG_Credit_2-1567 2 0 0 %

MIG_Credit_3 -1567 2 0 0 %

test01 2 0 0 %

Promotion Summary Report

The Promotion Summary Report provides promotion information over a specified period.

The summary report includes the following information:

- Promotion name
- Promotion status (Active or Inactive)
- Promotion global limited liability status (Unset, Eligible, Not Eligible)
- Promotion start date
- Promotion end date
- Total number of promotion rewards applied for the current promotion, calculated when the report is run.
- Total value of multi-balance rewards applied for the current promotion, calculated when the report is run.
- Total number of product type swaps for the current promotion, calculated when the report is run.

Example

Prepaid Charging - Promotion Summary Report

==========

Reporting Period: 1 January 2009 - 1 January 2009

JANUARY 2009

Service Name: Boss

==========

Promotion Name Active GLL Status Start Date End Date Num Promos Value Prod Swaps

Monthly >10 Reward then Gen Cash +1 Inactive Unset 20091026000000 20101026000000 0 0 0

Monthly > 20 then Gen cash +1-50 Inactive Unset 20090926000000 20091224000000 0 0 0

sanity test Inactive Unset 20091124000000 20091224000000 0 0 0

MJH_Reward Inactive Unset 20090820000000 20091120000000 0 0 0

SL Reward 01 Inactive Unset 20081028000000 20101028000000 0 0 0

SL Reward 02 Inactive Unset 20081028000000 20101028000000 0 0 0

test reward Inactive Unset 20091028000000 20111028000000 0 0 0

SL Test Inactive Unset NULL NULL 0 0 0

TP_Promo1 Inactive Unset NULL NULL 0 0 0

SL Test 2 Inactive Unset NULL NULL 0 0 0

SL Test ME 10 Active Unset NULL NULL 0 0 0

SL Test ME 20 Active Unset NULL NULL 0 0 0

Tony1 Inactive Unset NULL NULL 0 0 0

testmbv-21 Inactive Unset 20090819130016 20090823170016 0 0 0

Activation Credit-106 Inactive Unset 20081123160027 20101123160027 0 0 0

MJH_11-21 Inactive Unset 20091027060055 20101027060055 0 0 0

act test-83 Inactive Unset 20081028100016 20100828100016 0 0 0

Daily Start 21 Expiry Inactive Unset 20091026000000 20101026000000 0 0 0

Service Name: MigrationSP

==========

Promotion Name Active GLL Status Start Date End Date Num Promos Value Prod Swaps

SL Test 04 with Reward Product Active Unset 20091115000000 20101130000000 0 0 0

MIG_Daily_EXP_010 Active Unset 20091015000000 20101015000000 0 0 0

MIG_BV010 Active Unset NULL NULL 0 0 0

MIG_BV0101 Active Unset NULL NULL 0 0 0

MIG_BV0102 Active Unset NULL NULL 0 0 0

MIG_BV0103 Active Unset NULL NULL 0 0 0

MIG_BV0104 Active Unset NULL NULL 0 0 0

MIG_BV020 Active Unset NULL NULL 0 0 0

MIG_BV0201 Active Unset NULL NULL 0 0 0

MIG_BV0202 Active Unset NULL NULL 0 0 0

SL Test Active Unset NULL NULL 0 0 0

SL Test1 Active Unset NULL NULL 0 0 0

SL Test2 Active Unset NULL NULL 0 0 0

MIG_Daily_Time_RTR_020 Active Unset 20091015000000 20101015000000 0 0 0

MIG_Wallet_SMS_RTR_030 Active Unset 20091015000000 20101015000000 0 0 0

MIG_Act_4-109 Active Unset 20091102110031 20091128110031 0 0 0

MIG_Act_1-108 Active Unset 20090926110035 20100126150035 0 0 0

MIG_Act_2-108 Active Unset 20091026110042 20101026110042 0 0 0

MIG_Act_3-108 Active Unset 20091026110042 20091231230042 0 0 0

MIG_Credit_4-1564 Active Unset 20091026110058 20101026110058 0 0 0

MIG_Credit_1-1567 Active Unset 20091026110005 20101026110005 0 0 0

MIG_Credit_2-1567 Active Unset 20091026110009 20101026110009 0 0 0

MIG_Credit_3 -1567 Active Unset 20091026120000 20101026120000 0 0 0

test01 Active Unset 20090901000000 20100904000000 0 0 0

Account Balance

The Account Balance report details the wallet information for each subscriber. It is ordered by Product Type and Wallet State.

The report shows the current status of wallets at the time it was run. This means you may not get the same results if the report is re-run.

Tip: Balances for shared wallets will be identified by enclosing the Wallet ID in square brackets [ ].

Account Balance (csv)

The Account Balance (csv) report lists the following wallet information for each subscriber. Items in the report are comma separated:

CLI, wallet ID, product type name, wallet state, wallet expiry date, balance type name, balance value [, balance type name, balance value]

The balance type name and balance value is repeated for each balance. Values for:

- Monetary balances, are reported in system major currency; for example, US $1.10 is reported as **1.10** where the currency base is 100 and the number of decimal places is 2.
- Time balances are reported in hundredths of seconds (1/100 seconds).
- SMS balances are reported in numbers of SMS messages; for example, the Free SMS balance would be the number of free SMS messages.

Note: No header or footer information is provided as this report is intended for use by third parties only.

License

The report provides statistics on licensable elements of CCS, such as:

- throughput figures for various protocols, and
- use of specific software components.

In this report, any lines of the following format are set by the Statistics Category field in the Capability configuration:

PrePaid Charging <Type>, Protocol=<protocol>, Domain Type=<domain>

For more information about configuring these entries, see Capability.

Example

PrePaid Charging - License Report

==========

Reporting Period: 23 August 2007 - 21 November 2007

Service Metric Value

------- ------ -----

Universal Service Management System Users 88784

Universal Service Management System - Cluster Pack Users 0

Universal Application Server Users 88784

Control Plan Editor Feature Enabled

PrePaid Charging Subscriber Profile Manager Feature Enabled

PrePaid Charging Voucher Management Users 88784

PrePaid Charging Rewards Users 0

PrePaid Charging Service Bundles Users 88784

PrePaid Charging Peer to Peer Users 88784

PrePaid Charging Data, Protocol=SMPP, Domain Type=UBE SMAPS 0

PrePaid Charging Voice, Protocol=CAP3, Domain Type=UBE CAPS 0

PrePaid Charging Voice, Protocol=CS1, Domain Type=UBE CAPS 0

PrePaid Charging Voice, Protocol=ISUP, Domain Type=UBE CAPS 0

USSD Self Care Users 0

SMS Self Care Users 0

Product Type Duration

The Product Type Duration report details the total call duration per month. This report documents the sum of the duration of inter-net (roaming) and intra-net (non-roaming) calls per month per product type.

The following EDR types are used:

- 1 Regular Call, and
- 11 Roaming Call.

Note: Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Product Type Recharge

The Product Type Recharge report details the number and amount of voucher recharges and other types of recharges (such as credit card recharge) per month per product type per balance type. The amount for each balance type is shown in a separate column.

Tip: Recharges for deleted balance types are listed under "Other Balance Type".

The following EDR types are used:

- 4 Voucher Recharge
- 8 Freeform Recharge
- 9 Creditcard Recharge
- 10 Voucher Freeform Recharge
- 15 Voucher Redeem, and
- 16 Rewards.

Note: Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Product Type Utilisation

The Product Type Utilisation report details the number of calls and notifications per month based on whether or not they are roaming.

This reports on the number of calls per month per product type for the following:

- Intra-net Calls (EDR type 1)
- Inter-net Calls (EDR type 11)
- Intra-net Notifications (EDR type 12)
- Inter-net Notifications (EDR type 13)

Note: Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Reward Application Report

The Reward Application Report details the number of rewards by Service Provider per Product Type for the date range.

When collating the report details, totals will be generated on the service provider boundary covering all product types within the service providers.

If a Product Type does not have any rewards applied it will still be detailed within the report count, with the value set to 0.

The following EDR types are used:

- 1 Regular Call.

Note: Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Report example

UBE WM – Reward Recharge

==========

Reporting Period: September 2006 - September 2006

SEPTEMBER 2006

Service Name: MVNO Alpha

Product Type General SMS Data

========== ======= ===== ====

Bronze 100 254 123

Silver 1432 432 54

Gold 6523 4321 1432

Hybrid 652 432 21

Student 21 120 0

========== ======== ===== ====

Total 8728 5559 1630

Service Name: MVNO Beta

Product Type Basic Reward Product Swap Mixed

========== ========== ========== =====

Basic 0 0 123

Executive 1245 34 5234

========== ========== ========== =====

Total 1245 34 5357

Subscriber State Change

The Subscriber State Change report indicates the number of subscribers that changed to a particular state per product type per month. If a subscriber has moved to the new state more than once in the reporting period, then each instance will be reported.

This report has a third report parameter (after start and end dates) that provides a drop-down list for selecting the new state to be reported on.

For example, selecting **Active** as the state will generate a report showing the number of subscribers that were activated.

The following EDR types are used:

- 1 Regular Call
- 2 Operator Updates
- 3 Expiration
- 4 Voucher Recharge
- 5 Friends & Family, Friends & Destination Config Change
- 6 Direct Amount Charge
- 8 Freeform Recharge
- 11 Roaming Call
- 12 Intra-net Notifications
- 13 Inter-net Notifications
- 14 GPRS Volume/Duration Charge
- 16 Rewards
- 31 Product Type Swap
- 32 Product Type Swap
- 33 Read Secret Code
- 49 Periodic Charge

Note:

- A subscriber may not be in the new state at the time this report is run, therefore no direct comparison with the results of this report and the current subscriber state can be made.
- Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Entering Relative Dates

Relative dates can be used in **Start Date (YYYYMMDD)** and **End Date (YYYYMMDD)** when configuring the **Generate Report 'Subscriber State Change Report'** parameters.

The fields accept a *YYYYMMDD* date format where *YYYY*, *MM*, and *DD* specify the Year, Month and Day, respectively. Setting the year as `9991` will allow you to set a relative date MM months and DD days before today. Setting the year as `9992` will allow you to set a relative date MM months and DD days before the first day of this month.

The following are some relative date input examples:

- `99910001` specifies yesterday (0 months and 1 day before today)
- `99910000` specifies today (0 months and 0 days before today)
- `99920100` specifies the first day of last month (1 month and 0 days before the first day of this month)
- `99920001` specifies the last day of last month (0 months and 1 day before the first day of this month)

Voucher Activity

The Voucher Activity report details all user activity associated with the creation and modification of vouchers.

Report example

This is an example Voucher Activity report with only dates set.

Voucher Activity Report

==========

Reporting Period: 17 January 2011 - 17 February 2011

User Name: OPS$SMF_OPER

==========

Date of Change Time of Change Action Voucher Number or Range

---------- ---------- ----------

30-JAN-11 20:15 Voucher Batch Created () 1000012/1000020

30-JAN-11 21:35 Voucher Batch Created () 9100000/9100100

30-JAN-11 21:43 Voucher Batch Created () 9100000/9100100

30-JAN-11 21:45 Voucher Batch Created () 9100000/9100100

30-JAN-11 22:26 Voucher Batch Created () 8800000/8800100

31-JAN-11 00:12 Voucher Batch Created () 9100000/9100100

31-JAN-11 00:23 Voucher Batch Created () 8800000/8800100

31-JAN-11 03:18 Voucher Batch Created () 7700000/7700100

31-JAN-11 03:21 Voucher Batch Created () 7700000/7700100

31-JAN-11 03:28 Voucher Batch Created () 6600000/6600100

01-FEB-11 05:28 Voucher Batch Created () 6100000/6100100

User Name: SU

==========

Date of Change Time of Change Action Voucher Number or Range

---------- ---------- ----------

28-JAN-11 04:22 Voucher Type Created (Tax_Vouchers)

30-JAN-11 20:11 Voucher Type Created (Sam's Voucher Type)

30-JAN-11 21:08 Voucher Batch Edited (:Status Changed to A:) 1000012/1000020

30-JAN-11 21:08 Voucher Validated (Failure) 1000016

30-JAN-11 21:37 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

30-JAN-11 21:41 Voucher Batch Deleted () 9100000/9100100

30-JAN-11 21:44 Voucher Batch Deleted () 9100000/9100100

30-JAN-11 21:45 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

30-JAN-11 22:28 Voucher Batch Edited (:Status Changed to A:) 8800000/8800100

31-JAN-11 00:11 Voucher Batch Deleted () 9100000/9100100

31-JAN-11 00:13 Voucher Batch Edited (:Status Changed to A:) 9100000/9100100

31-JAN-11 00:23 Voucher Batch Deleted () 8800000/8800100

31-JAN-11 03:19 Voucher Batch Edited (:Status Changed to A:) 7700000/7700100

31-JAN-11 03:20 Voucher Batch Deleted () 7700000/7700100

31-JAN-11 03:29 Voucher Batch Deleted () 6600000/6600100

31-JAN-11 03:38 Voucher Batch Deleted () 7700000/7700100

01-FEB-11 05:28 Voucher Batch Edited (:Status Changed to A:) 6100000/6100100

06-FEB-11 22:22 Voucher Type Created (test)

06-FEB-11 22:23 Voucher Type Created (JRE)

06-FEB-11 22:30 Voucher Batch Deleted (JRE)

06-FEB-11 22:30 Voucher Type Created (JRE)

07-FEB-11 00:55 Voucher Validated (Failure) 1111

07-FEB-11 00:57 Voucher Validated (Failure) 1111

17-FEB-11 01:28 Voucher Validated (Success) 12300014886

17-FEB-11 01:28 Voucher Validated (Failure) 1230004886

17-FEB-11 01:28 Voucher Validated (Failure) 123000

17-FEB-11 01:41 Voucher State Changed (F:Frozen for Testing) 1230001

17-FEB-11 01:41 Voucher Validated (Success) 12300014886

17-FEB-11 02:01 Voucher State Changed (C:changed to created) 1230001

17-FEB-11 02:23 Voucher State Changed (D:Delete) 8880001

17-FEB-11 02:23 Voucher State Changed (D:Delete) 8880002

17-FEB-11 02:33 Voucher State Changed (A:Re-activated) 8880001

17-FEB-11 03:15 Voucher Type Deleted (long name
11111111111111111111111111111111111111a)

17-FEB-11 04:01 Voucher Recharged (Failure) 33300017165

17-FEB-11 04:01 Voucher Recharged (Failure) 33300017165

17-FEB-11 04:02 Voucher Recharged (Failure) 33300017165

17-FEB-11 04:04 Voucher Recharged (Failure) 33300053126

17-FEB-11 04:08 Voucher State Changed (A:) 3000025

17-FEB-11 04:14 Voucher Recharged (Failure) 33300047331

17-FEB-11 04:24 Voucher Recharged (Failure) 79790017616

17-FEB-11 04:27 Voucher Recharged (Failure) 79790017616

Voucher Redemption

The Voucher Redemption report details the number of vouchers redeemed per month per product type per voucher type. It also shows totals for each Voucher Type Scenario.

The following EDR type is used:

- 15 Voucher Redeem.

Note:

- Redemptions of deleted voucher types are listed under "Other Type".
- Partial EDR records may be produced for data charging when config parameter **createEDRForMidSessionCommit** is set to True. Partial EDR records are recognised by the tag and value MID_SESSION=True. These records are ignored for this report.

Report example

This is an example Vouchers report with only dates set.

UBE WM - Voucher Redemption Recharge

==========

Reporting Period: 1 January 2008 - 10 January 2008

JANUARY 2008

==========

Service Name: Boss

Product Type Basic Recharge Multi-Balance

========== ========== ==========

Local Product 46 39

Standard Product 123 378

Premium Product 92 85

Premium Plus Product 2 5

========== ========== ==========

Total: 243 507

Service Name: Test

Product Type Test Voucher

========== ==========

Test Product 11

========== ==========

Total: 11

Voucher Status

The Voucher Status report details all vouchers in the system with details about their current state.

The generation of each report results in the creation of two files, namely a detail file and a control file. The format of the detail file is a CSV file.

Report example

This is an example Voucher Status report CSV data imported into a spreadsheet program.

VoucherNumber	VoucherState	VoucherRedeemingCLI	VoucherTopUpTime	VoucherBatchID	PreUseExpiryDate	VoucherType
1000000008	R	888888888893	2805201322003300	81	2805201415001400	$10 Cash $5 promo
1000000001	R	888888888893	2805201322052000	81	2805201415001400	$10 Cash $5 promo
1000000000	R	888888888893	2805201322223600	81	2805201415001400	$10 Cash $5 promo
1000000005	R	888888888893	2805201322414400	81	2805201415001400	$10 Cash $5 promo
1000000010	R	888888888893	2805201323291100	81	2805201415001400	$10 Cash $5 promo
1000000003	A			81	2805201415001400	$10 Cash $5 promo
1000000002	A			81	2805201415001400	$10 Cash $5 promo
1000000004	A			81	2805201415001400	$10 Cash $5 promo
1000000006	A			81	2805201415001400	$10 Cash $5 promo
1000000007	A			81	2805201415001400	$10 Cash $5 promo
3302000000	C			101		$10 Cash $5 promo
3302000001	C			101		$10 Cash $5 promo
3302000002	C			101		$10 Cash $5 promo

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CCP Dashboard

This chapter explains the features of Oracle Communications Network Charging and Control Customer Care Portal that are available from the CCP Dashboard.

This chapter contains the following topics.

CCP Dashboard Screen

Searching for Subscribers

Quick View

View EDRs from Dashboard

Common Tasks

History

Changing Your Password

Locking and Unlocking the Dashboard

CCP Dashboard Screen

The CCP Dashboard screen displays information about your subscribers. It contains a number of features that help you to manage subscriber data quickly. You can:

- Search for subscriber accounts. For details, see Searching for Subscribers.
- View a summary of a subscriber's details. For details, see Quick View.
- Search for and change the status of vouchers or redeem vouchers. For details, see Vouchers in CCP.
- View the subscriber's recent EDRs. For details, see View EDRs from Dashboard.
- Complete common administrative tasks. For details, see Common Tasks.
- Quickly find and select recently viewed subscribers or vouchers. For details, see History.
- Open the Edit Subscriber screen. For more information about editing subscribers, see Accessing the Edit Subscriber screen.

The CCP Dashboard screen also provides the following security features:

- Lock the dashboard. For details, see Locking and Unlocking the Dashboard.
- Change your password. For details, see Changing Your Password.

Buttons

This table describes the buttons available in the CCP Dashboard screen.

Button	Function
Lock Dashboard	Hides the CCP Dashboard screen and opens the CCP Dashboard Locked screen. The user must enter their user name and password before the CCP Dashboard screen will be reopened. **Note:** This must be the same user and password combination as the one entered when the user initially logged in.
Password	Use to change your password.
Help	Opens the CCP help files.
Search	Use to search for subscriber or voucher records.
Open	Opens the Edit Subscriber screen for a selected subscriber.
Refresh	Refreshes the details in the screen.
Apply	Changes the voucher state.
Redeem Voucher	Redeems a voucher for a selected subscriber.
Vouchers	Toggles the Vouchers panel on or off.
Common Tasks	Toggles the Common Tasks panel on or off.
History	Toggles the History panel on or off.
View EDRs	Toggles the EDR panel on or off.

Status bar

In the bottom left corner of the CCP Dashboard there is a status bar. The status bar displays messages about the tasks being performed using the CCP Dashboard.

Accessing the Edit Subscriber screen

Follow these steps to open the Edit Subscriber screen for a selected subscriber.

Note: Only primary wallet information is available for editing when you open the Edit Subscriber screen from the CCP Dashboard.

1. In the CCP Dashboard screen, search for the subscriber to view or edit using the subscriber search fields. For details see Finding a subscriber.
2. Highlight the row in the search results for the subscriber to edit.
3. Click **Open**.

   Result: You see the details of the subscriber selected from the search results in the Edit Subscriber screen.

   Tip: To quickly open the Edit Subscriber screen, double click the required entry in the search results.

Searching for Subscribers

You can search for subscribers in the CCP Dashboard screen based on criteria entered in the subscriber search fields. The available search fields will depend on how your system has been set up. A maximum of four search fields may be available.

Finding a subscriber

Follow these steps to search for a subscriber in the CCP Dashboard screen.

1. From the drop down list, select the **Service Provider**.
2. In the search panel, enter the search strings you are using to find the required subscriber in one or more of the available search fields.

   If your search is based on any of these fields, you can enter just the first few characters to search for in the search field:

   - Subscriber ID
   - Card Number
   - Customer
   - Wallet Reference

   If you are searching on any other field, then you must enter the full value to search for in the search field.
3. Click **Search**.

   Result: Subscribers that match all the search criteria will be displayed in the search results.

   Note: You may only access wallet information for a subscriber's primary wallet in the CCP, therefore only primary wallet information will be returned.

Search results

The results of a subscriber search are displayed in the search results table immediately below the subscriber search fields. Only the first 100 records matching your search criteria will be listed. If the subscriber you require does not appear in the list and more than 100 records were returned, then you will need to refine your search criteria. For example, enter longer search strings and/or specify more search fields.

Tip: To reorder subscribers by a particular column name, select the column in the search results table.

Finding linked subscribers

Follow these steps to find any additional subscribers that share their primary wallet with a selected subscriber.

1. In the search results panel select the subscriber for whom you want to find any linked subscribers.
2. In the search panel select the **Show Linked Subscribers** check box.

Result: Any additional subscribers that share the primary wallet of the selected subscriber will appear in the search results list.

Quick View

The Quick View panel in the CCP Dashboard screen lets you view important information about a selected subscriber account. The information which is available will depend on the configuration defined for the selected service provider.

Viewing a subscriber

Follow these steps to see a quick view of a selected subscriber.

1. In the search results panel on the CCP Dashboard, select the subscriber record to view.

   Result: The Subscriber's details appear in the Quick View panel.

   Tip: To display the details of a previously selected subscriber in the Quick View, select the subscriber ID from the History panel.

View EDRs from Dashboard

The View EDRs panel in the CCP Dashboard screen lets you view the recent EDRs for a selected subscriber account. The information which is available will depend on the configuration defined for the selected service provider.

Viewing EDR list

Follow these steps to see the EDRs of a selected subscriber.

1. In the search results panel on the CCP Dashboard, select the subscriber record to view.

   Result: The subscriber's details appear in the Quick View panel, and the EDR details are listed in the View EDRs panel.

   Tip: To display the details of a previously selected subscriber in the Quick View, select the Subscriber ID from the History panel.

2. Click **View EDRs** if panel is not displayed.

   Note: The information which is available will depend on the configuration defined for the selected service provider. The default EDRs shown will depend on configuration in the **sms.html** or **ccp.jnlp** file.

View EDR detail

Follow these steps to view the details of an EDR record.

1. Select the EDR record to view in the table in the View EDRs panel.
2. Double click the EDR record.

   Result: You see the EDR Details for Subscriber screen.

Note: The screen layout and available fields depend on the category and template definition configured for the EDR in CCS. For more information, refer to *CCS User's Guide*.

3. To change the currency used to display costs and balances, select the **Display Currency** drop down list.
4. When you have finished viewing that EDR record, click **Close**.

   Result: You return to the Dashboard.

   Notes:

   - From the Dashboard the EDR details can only be viewed, they cannot be reversed.
   - To reverse a charge the EDR must be accessed through the Edit Subscriber process. See the Reversing a charge procedure.

Common Tasks

The CCP Dashboard screen provides the facility to execute any common tasks that have been set up for you. You execute common tasks from the Common Tasks panel where a button is provided for each available task.

Note: Common Tasks may also be referred to as BPL tasks.

Executing a common task

Follow these steps to execute a common task for a subscriber.

Note: The common task will be executed for the subscriber currently displayed in the Quick View.

1. In the CCP Dashboard screen search for the subscriber. For details, see Finding a subscriber.
2. Select the subscriber record in the search results so that their details appear in the Quick View.

   Tip: Select a subscriber from the History panel to redisplay their details in the Quick View.
3. If the Common Tasks panel is not currently visible in the CCP Dashboard screen, then click **Common Tasks** to display it.

   Note: If no common tasks have been defined for the service provider then the Common Tasks panel is not displayed. You see the following message in the Status bar at the bottom of the screen: "`No Common Tasks defined`."
4. In the Common Tasks panel, click the button for the task you want to execute.

   Result: You see the Confirm Execute Common Task prompt.
5. If any parameters have been defined for the tasks, enter the values for these as prompted.

   Warning: You must enter a value for all mandatory parameters.
6. Click **Execute**.

   Result: You see the Executing Common Task progress box.

   Then you see the Execute Common Task Result prompt.

Note: If the task fails then a message giving the failure reason is displayed in the Execute Common Task Result screen.

7. Click **OK**.

History

The search history for subscriber accounts and Vouchers is displayed on the **Subscriber** and **Voucher** tabs in the History panel. A new entry is added to the subscriber history each time a subscriber account is displayed in the Quick View panel. Similarly, a new entry is added to the voucher history each time a valid voucher is retrieved in the Vouchers panel.

Viewing history

Follow these steps to view a historical list of subscribers or vouchers.

1. If the History panel is not currently visible in the CCP Dashboard screen, click **History** to display it.
2. In the History panel select the tab for the type of history you want to view. Select one of:
   - **Subscriber**
   - **Voucher**
3. Select an item from the history to review its details. Select one of:
   - Subscriber ID to view its details in the Quick View panel
   - Voucher ID to view its details in the Vouchers panel

   Tip: Double-click a subscriber ID to access its details in the Edit Subscriber screen.

Changing Your Password

The Change Password screen appears when you click **Password** in the CCP Dashboard screen.

Use this screen to change the password for your user account.

Changing your password

Follow these steps to change your password.

1. In the CCP Dashboard screen, click **Password**.

   Result: You see the Change Password screen.
2. Enter your current password in the **Old Password** field.
3. Enter your new password in the **New Password** field.

   Note: For security reasons, a password must be at least 8 characters long.
4. Re-enter your new password in the **Confirmation** field.
5. Click **OK** to save the changed password.

Locking and Unlocking the Dashboard

If you need to leave your work station for a short period, then you can lock the CCP Dashboard screen so that the screen contents are protected. When you lock the CCP Dashboard, the screen is hidden from view and the CCP Dashboard Locked prompt is displayed. The CCP Dashboard will be redisplayed as soon as you reenter your original user name and password correctly.

You can make a maximum of three attempts to enter the correct user name and password combination. If you make more than three failed attempts, then you will receive a warning message and the CCP application will be terminated.

Note: The CCP Dashboard will also be locked automatically if the SMS quality of service feature is enabled and you have not used the CCP Dashboard for a configurable period of time.

For further information on this feature refer to *SMS User's Guide*.

Locking the dashboard

Follow these steps to lock the CCP Dashboard.

1. In the CCP Dashboard screen, click **Lock Dashboard**.

   Result: The CCP Dashboard screen is hidden from view and you see the CCP Dashboard Locked prompt.

Unlocking the dashboard

Follow these steps to unlock the CCP Dashboard screen.

1. Enter your user name in the **User Name** field in the CCP Dashboard Locked screen.

   Note: This must be the same user name as the one you originally used to log in with for this session.

2. Enter your password in the **Password** field.
3. Click **Ok**.

   Result: The CCP Dashboard screen reappears.

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Editing Subscribers through the CCP

You can open the Edit Subscriber screen for a selected Subscriber from the CCP Dashboard. From the Edit Subscriber screen you can manage the Subscriber's account and change their configuration. For example, to:

- Edit the subscriber details, see Editing Subscribers
- Configure subscriber zones, see Configure Subscriber Zones
- Add a secondary wallet, see Wallets
- Edit the primary wallet, see Edit Wallets
- View EDRs, see View EDRs
- Execute a BPL or Task, see Execute Business Process Logic
- Perform a credit transfer, see Perform Credit Transfers

Accessing the Edit Subscriber screen

Follow these steps to open the Edit Subscriber screen for a selected subscriber.

Note: Only primary wallet information is available for editing when you open the Edit Subscriber screen from the CCP Dashboard.

1. In the CCP Dashboard screen, search for the subscriber to view or edit using the subscriber search fields. For details see Finding a subscriber.
2. Highlight the row in the search results for the subscriber to edit.
3. Click **Open**.

   Result: You see the details of the subscriber selected from the search results in the Edit Subscriber screen.

   Tip: To quickly open the Edit Subscriber screen, double click the required entry in the search results.

18
Vouchers in CCP

This chapter explains how to search for vouchers, change the status of vouchers, and redeem vouchers from the CCP Dashboard in the Oracle Communications Network Charging and Control Customer Care Portal.

This chapter contains the following topics.

Vouchers

Searching for Vouchers

Voucher Status

Redeeming Vouchers

Decrypting Voucher Private Secret

Vouchers

The Vouchers panel in the CCP Dashboard screen lets you:

- Search for a voucher and view its details. See Searching for Vouchers
- Change the voucher status (providing you have sufficient privileges). See Voucher Status
- Redeem the voucher for a selected subscriber. See Redeeming Vouchers
- Decrypt the private secret of a voucher. See Decrypting Voucher Private Secret

Voucher information fields

This table describes the voucher information fields that may be available in the Vouchers panel.

Depending on how the Vouchers panel has been configured, the fields available to you will be a subset of these fields.

Warning: Fields may also have been given different labels.

Field	Description
Batch Code	The batch code for the voucher batch that includes this voucher.
Batch ID	Unique ID for the voucher batch.
Batch Name	The name of the voucher batch. This can be up to 50 characters long.
Batch State	The state of vouchers in the voucher batch. The batch states are: • Active • Created • Unavailable

Field	Description
HRN	Voucher Hidden/Human Readable Number, decrypted from the Private Secret.
PIN	The PIN for the voucher.
Private Secret	Encrypted voucher HRN or PIN.
Scenario	The voucher scenario used to redeem the voucher.
Serial Number	The voucher serial number.
Subscriber ID	The ID of the subscriber redeeming the voucher.
Voucher Activated	The voucher activation date.
Voucher Created	The voucher creation date.
Voucher Number	The voucher number and PIN.
Voucher Redeemed	The voucher redemption date.
Voucher Status	The voucher status. Available values are: • Created • Active • Frozen
Voucher Reference	Internal voucher number
Wallet Reference	The wallet reference of the redeeming wallet.

Searching for Vouchers

You can search for a voucher in the Vouchers panel based on one of the following:

- Voucher Number or HRN
- Voucher Serial Number

When you find a voucher, its details are displayed in the information fields in the Vouchers panel. You will then be able to redeem the voucher against a selected subscriber, change the voucher status, or decrypt the private secret of the voucher to obtain the HRN.

Finding a voucher

Follow these steps to look for a Voucher.

1. In the CCP Dashboard screen, select the **Service Provider** from the drop down list.
2. If the Vouchers panel is not currently visible, click **Vouchers** at the bottom right hand corner of the CCP Dashboard screen.

   Result: You see the Vouchers panel displayed in the bottom half of the screen.
3. In the Vouchers search fields, enter one of the following:
   - The voucher number or HRN in the **Voucher** field
   - The voucher serial number in the **Serial Number** field
   - The voucher PIN in the **PIN** field
4. Select the relevant search option. Select one of the following:

- **Voucher** to search for a voucher number or HRN
- **Serial Number** to search for a voucher serial number

5. Click **Search**.

   Result: If found, you see the relevant details from the voucher record in the information fields in the Vouchers panel. Refer to Voucher information fields.

6. You may perform the following actions on the selected voucher:
   - Change the voucher status. See Voucher Status
   - Redeem the voucher. See Redeeming Vouchers
   - If authorised, decrypt the voucher private secret to recovr the HRN. See Decrypting Voucher Private Secret.

Voucher Status

You can change the state of a voucher displayed in the Vouchers panel if you have sufficient privileges. If you have insufficient privileges you will be able to view the voucher state, but you will not be able to change it.

Changing voucher status

Follow these steps to change the status of a Voucher.

1. If the Vouchers panel is not currently visible in the CCP Dashboard screen, click **Vouchers** to display it.
2. Find the voucher whose status you want to change. See Finding a voucher for details.

   Result: You see the voucher details in the **Vouchers** panel.

3. Select the new status for the voucher from the **Voucher Status** drop down box. Refer to Voucher information fields.
4. Click **Apply**.

   Result: You see the Voucher State Update Successful prompt.

5. Click **OK**.

Redeeming Vouchers

You can redeem the voucher displayed in the Vouchers panel for a valid subscriber displayed in the Quick View. Before redeeming the voucher, you must ensure that the voucher scenario has been selected, and that the voucher PIN has been specified in the **PIN** search field.

Redeeming a voucher

Follow these steps to redeem a voucher for a subscriber.

Note: You will only be able to redeem the voucher if you have sufficient privileges.

1. If the Vouchers panel is not currently visible in the CCP Dashboard screen, click **Vouchers** to display it.
2. Find the subscriber for whom you want to redeem a voucher. See Finding a subscriber for details.

3. Select the subscriber ID in the search result panel or from the **Subscriber History** panel.

   Result: You see the subscriber details in the **Quick View** panel.

4. Find the voucher to redeem. See Finding a voucher for details.

   Result: You see the voucher details in the **Vouchers** panel. Refer to Voucher information fields.

5. In the **PIN** search field, enter the voucher PIN.
6. If required, select a different scenario for the voucher from the **Scenario** drop down box.
7. Click **Redeem Voucher**.

   Result: The system will attempt to recharge the subscriber with the voucher. If it is successful, you see the Success prompt.

8. Click **OK**.

Decrypting Voucher Private Secret

You can decrypt the private secret of a voucher assuming that you have the required access template assigned and the voucher was produced by an authentication rule that allows for decryption (AES symmetric cipher and CB10 HRN AES).

Vouchers with private secrets that were not created using an AES256 CCS Auth rule cannot be decrypted.

Decrypting the private secret of a voucher

Follow these steps to decrypt the private secret of a voucher for a subscriber.

Note: You will only be able to decrypt the private secret of a voucher if you have sufficient privileges.

1. If the Vouchers panel is not currently visible in the CCP Dashboard screen, click **Vouchers** to display it.
2. Find the subscriber for whom you want to decrypt the private secret of a voucher. See Finding a subscriber for details.
3. Select the subscriber ID in the search result panel or from the **Subscriber History** panel.

   Result: You see the subscriber details in the **Quick View** panel.

4. Find the voucher to decrypt. See Finding a voucher for details.

   Result: You see the voucher details in the **Vouchers** panel. Refer to Voucher information fields.

5. If required, select a different scenario for the voucher from the **Scenario** drop down box.
6. Click **Decrypt Private Secret**

   Result: The system decrypts the private secret and displays it in the HRN field.

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Subscriber Profile Manager Screen Layout

This chapter explains how to configure the screen layout for the Prepaid Charging Edit Subscriber screen and for the panels in the CCP Dashboard screen using Oracle Communications Network Charging and Control Subscriber Profile Manager.

The SPM provides the facility to define which fields will be displayed, and how they will be laid out in the screen. To configure a new panel you need to:

1. Assign groups to the node on a tab.
2. Configure the fields in the group which will be used on the screen
3. Configure the option which the fields will be displayed on

Details of these tasks are covered in this chapter.

This chapter contains the following topics.

Assigning Groups to Config

Field Type Definition and Layout

Field Type

Layout Details

Screen Preview

Assigning Groups to Config

This topic describes how to:

- Assign a group to a node
- Edit a group assignment

Config tabs where you can assign groups

You can assign groups, or edit assignment of groups, on the following tabs on the Subscriber Profile Manager screen.

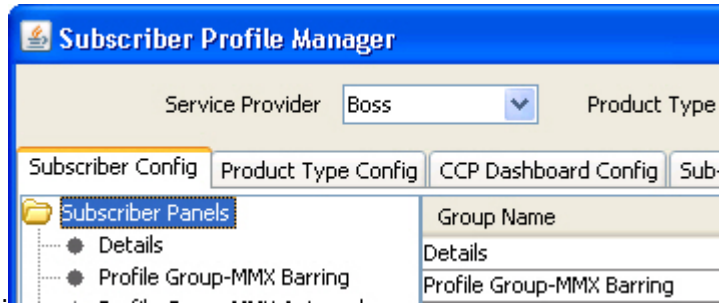
- **Subscriber Config** - to define the screen layout of the Prepaid Charging Edit Subscriber screen. For specific details, see Subscriber Panels.
- **Product Type Config** - to define the screen layout for profile tag fields in the Prepaid Charging Edit Product Type screen. For specific details, see Product Type Panels.
- **Sub-group Configuration**. For specific details, see Sub-Groups.

Note: Groups are configured on the **Group Configuration** tab of the Subscriber Profile Manager screen.

Assigning a group to a node

Follow these steps to assign a group to a node in a Config tree.

1. On the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** from the drop down lists.
2. Select the tab on which to assign a group. Tabs are listed in the Config tabs where you can assign groups topic.
3. Select the folder on the config tree on the left-hand side of the screen, for example:



Result: The grid will display the groups which have been configured for the Config tree.

4. Click **New**.

   Result: You see the Assign Group Dialog screen.

5. From the Group Name drop down list, select the group you want to assign to the Config tree.

   Note: This field is populated with the relevant Group Type defined on the **Group Configuration** tab.

6. In the **Group Order** field type the order number for the group. This determines the position of the group on the node in the Config tree and in the screen you are configuring.

   Note: Groups with the same order number are ordered alphabetically.

7. Click **Save**.

Editing a group assignment

Follow these steps to edit the assignment of a group to a node in a Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. Select the tab on which to assign a group. Tabs are listed in the Config tabs where you can assign groups topic.
3. Select the folder on the config tree on the left-hand side of the screen.

   Result: The grid will display the groups which have been configured for the Config tree.

4. Select the group to change in the grid.

5. Click **Edit**.

   Result: You see the Assign Group Dialog screen.

6. If required, select a different **Group Name** from the drop down list.

   Note: This field is populated with the relevant Group Type defined on the **Group Configuration** tab.

7. If required, in the **Group Order** field edit the order number for the group. This determines the position of the group on the node in the Subscriber Config tree and in the Edit Subscriber screen.

   Note: Groups with the same order number are ordered alphabetically.

8. Click **Save**.

Deleting a group

Follow these steps to delete a group from a Config tree.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. Select the tab on which the assigned group to delete is located. Tabs are listed in the Config tabs where you can assign groups topic.
3. Select the folder on the config tree on the left-hand side of the screen.

   Result: The grid will display the groups which have been configured for the Config tree.

4. Select the group to delete in the grid.
5. Click **Delete**.

   Result: You see the Delete Confirmation prompt.

6. Click **OK**.

Field Type Definition and Layout

The Subscriber Profile Manager allows you to define which fields will be displayed on some Prepaid Charging and CCP Dashboard screens. You can perform the following actions:

- Adding a new field for group
- Editing a field from a group

Config tabs where you can define fields for groups

You can add fields to groups, or edit fields from groups, on the following tabs on the Subscriber Profile Manager screen.

- **Subscriber Config** - to define the screen layout of the Prepaid Charging Edit Subscriber screen. For specific details, see Subscriber Group Field Configuration.
- **Product Type Config** - to define the screen layout for profile tag fields in the Prepaid Charging Edit Product Type screen. For specific details, see Product Type Field Configuration.

- **CCP Dashboard Config** - to define the screen layout for the Quick View in the CCP Dashboard. For specific details, see Quick View.
- **Sub-group Configuration**. For specific details, see Sub-Group Field Configuration.

Adding a new field for group

Follow these steps to add a field for a group.

Tip: You can create a basic layout for a field by specifying values only in the **Field Type**, **Display Name**, and **Grid Position** fields.

1. In the Subscriber Profile Manager screen, select the required **Service Provider** and **Product Type** from the drop down lists.
2. Select the tab where the group to add a field to is configured. Tabs are listed in the Config tabs where you can define fields for groups topic.
3. In the panel on the left, select the required group.

   Tip: If the group is not currently visible, double click on its node.
4. Click **New**.

   Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen title bar.

   For an example screen, see New Field for Group screen.
5. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.
6. Specify the Field Type details. For more information, see Field Type fields.
7. Specify the **Layout Details** for the field. This will determine where the field will appear on the screen.

   For more information on the layout details options, refer to Layout Details.
8. Click **Save**.

Editing a field from a group

Follow these steps to edit a field included in a group in a Config tree.

1. In the Subscriber Profile Manager screen, select the required **Service Provider** and **Product Type** from the drop down lists.
2. Select the tab where the group to edit a field from is configured. The relevant tabs are:
   - Subscriber Config
   - Product Type Config
   - Sub-group Configuration
3. In the panel on the left, select the required group.

   Tip: If the group is not currently visible, double click on its node.
4. Select the field on the grid and click **Edit**.

Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

For an example screen, see Editing Field from Group screen.

5. Edit the fields to reflect the changes you need to make. For more information, see:
   - Field Type fields
   - Layout Details.
6. Click **Save**.

Field Type

Each field used on a screen has a Field Type. The field type defines the features of the field, such as:

- What actions a user can take with the field
- Some elements of the field's appearance (such as whether it is a data entry field or a button)

Field Type fields

This table describes the fields in the field type area of the New/Edit Field for Group screen.

Note: Most of these fields will only be displayed for a specific Field Type.

Field	Description
Field Type	Defines the functions and appearance of the field. For more information about the different types of field which are available, see Field Types.
BPL	The BPL task to attach to this field. This drop down list is populated by records from the Task Management screen. **Note:** Only available if the Field Type is `Business Process Logic`.
Display Name	This is the label that will appear next to the field when the **Auto Create Label** check box is ticked. It is also used as part of the name of the access permission for this field. Access permissions are controlled in the SMS User Management screen. For more information about access permissions, see *NCCService Management System User's Guide*. **Note:** This field is required for all field types except `Business Process Logic`.
Profile Tag Name	The profile tag this field will provide access to. The list of available profile tags is populated by records configured in the ACS Configuration screen. For more information about profile tags, see Profile Tag Fields. **Note:** Only available if the **Field Type** value is `Profile Tag Field`.

Field	Description
Date Type	Defines whether or not a profile tag date field includes a time element. **Note:** Only available if the **Field Type** value is `Profile Tag Field`, and the **Profile Tag Name** displays a date type profile field.
Field	This will be either a database field or a search key field depending on the selected field type. **Note:** Only available if the **Field Type** value is `Database Field` or `Search Key Field`.
Type	A predefined list of display options for the field. This information is used to define how to display a field in the Preview screen. **Note:** Only available if the **Field Type** value is `Database Field` or `Search Key Field`.
Custom Type	A predefined group of fields. **Note:** Only available if the Field Type is `Custom Field` or `Custom Profile Field`.
Sub-Group	A group of fields included in a Sub-Group on the Subscriber Config tree. This drop down list is populated by sub-group records from the **Group Configuration** tab. **Note:** Only available if the **Field Type** value is `Sub-Group`.
Periodic Charge	The periodic charge to associate with this field. This list of available periodic charges is populated by the records on the **Periodic Charge** tab on the Wallet Management screen. For more information about periodic charges, see *NCCCharging Control Services User's Guide*. **Note:** Only available if the **Field Type** value is `Periodic Charge Field`.
Show Date Fields	Whether or not the three date fields should be displayed as part of this field. **Note:** Only available if the **Field Type** value is `Periodic Charge Field`.
Promotion	The promotions to associate with this field. The list is populated by the promotions defined in the Promotion Manager screen for the current service provider. **Note:** Only available in the Field Type is `Promotion Info Field`.
Show Expiry Date	Whether or not to display the promotion expiry date as part of this field. **Note:** Only available if the Field Type is `Promotion Info Field`.

Field Types

This table describes the function of the available fields for the different Field Types.

Field Type	Description	Screen
Business Process Logic	Provides a button which executes a BPL task. For more information about BPL task configuration, see *NCC Charging Control Services User's Guide*.	CCP Dashboard (Common Tasks option) Edit Subscriber
Profile Tag	Profile tags are flexible data fields which can be defined for subscribers or product types. Profile tags have different types depending on the type of data they store. For more information about profile tag configuration, see *NCC Advanced Control Services User's Guide*.	Edit Subscriber Edit Product Type
Database Field	A field which is specifically related to CCS functionality. These are usually predefined Profile Tags.	CCP Dashboard (Quick View and Vouchers options) Edit Subscriber
Search Key Field	A field on the CCP Dashboard which is used to search the SMF database.	CCP Dashboard (Quick View option)
Sub-Group	A group of fields of other types.	CCP Dashboard (Quick View option) Edit Subscriber
Periodic Charge Field	A field which displays the status of a subscriber's subscription to a periodic charge. **Notes:** • To change the status of a subscriber's periodic charge subscription, you must use a BPL task which uses a Periodic Charge Subscription node. • This option is only available if the periodic charge license is activated. For more information about periodic charges and periodic charge groups, see *NCC Charging Control Services User's Guide*.	Edit Subscriber

Field Type	Description	Screen
Promotion Info Field	A field which displays a predefined list of promotion data including the promotion: • name • status • tracker balance value, and • limited liability balance and status information. For more information about promotions, see the *NCC Promotion Manager User's Guide.*	Edit Subscriber
Custom Type	A predefined list of special fields.	CCP Dashboard (Quick View option) Edit Subscriber
Custom Profile Field	A predefined list of profile fields.	Edit Product Type
Wallet Life Cycle Field	Provides the Display Name of a Wallet Life Cycle Period. For more information about Wallet Life Cycle, see *NCC Charging Control Services User's Guide*.	CCP Dashboard (Quick View option) Edit Subscriber

Note: The availability of Field Types will depend on the screen the group is defined for. For example, the Vouchers group on the CCP Dashboard can only contain database fields.

Layout Details

You specify how a field will be displayed in the Layout Details panel in the New Field for Group and Edit Field From Group screens. For each field you can define its:

- Grid position
- External padding
- Auto resize option
- Anchor position
- Preferred size
- Label settings

Grid position

The SPM uses a grid to determine where a field is located on the screen. The grid position for a field defines which column and row it will be displayed on. Care must be taken when specifying the grid position to ensure fields do not overlap and that enough space is given to group field types. For example, you need to allow 5 columns to display the fields in the Wallet Information group.

Note: Rows and columns are not uniformly sized. Row height and column width is allocated dynamically and depends on how all the fields appearing in the screen have been configured.

Grid position fields

This table describes the function of each field.

Field	Description
Column	The column number defines which column the field will be displayed in. Valid column numbers are in the range 0 to 99, where '0' is the column furthest to the left of the screen. **Tips:** • The width of each column is allocated dynamically and depends on the length of the longest item to appear in the column. • Fields with the same column number will appear in a vertical line.
Row	Defines which row the field will be displayed on. Valid row numbers are in the range 0 to 99. **Tip:** It is a good idea to leave a gap between row numbers so that you can easily change a field's vertical position. This is especially important if you want to insert a new field or swap two fields around.
Width	Defines the number of columns required to display the field. **Note:** The field label will use one column, therefore you must set the width to more than one if the **Auto Create Label** check box is ticked.
Height	Defines the number of rows required to display the field.

External padding

You use the external padding fields to define the minimum amount of space between the field and the border of its display area. This helps to ensure that each of the fields displayed in the screen can be clearly identified.

Notes:

- Values must be specified in pixels.
- The display area is the whole cell in the grid.

Auto resize

You use the auto resize options to resize the field to fit the available display area.

Auto resize fields

This table describes the function of each field.

Field	Description
None	The displayed field is not resized.
Horizontal	The displayed field is stretched horizontally to fill the width of its display area.
Vertical	The displayed field is stretched vertically to fill the height of its display area.
Both	The displayed field is stretched horizontally and vertically to fill the available space.

Anchor position

The option you select for the Anchor position defines where the field will be placed within its display area. This feature is useful when the field you want to display is smaller than the display area specified for it.

Preferred size

You can override the default size used to display a field by setting a preferred size for it.

Note: The values specified for the preferred size may be ignored depending on which auto resizing option is selected.

Preferred size fields

This table describes the function of each field.

Field	Description
Height	Sets the display height for the field. Valid values are in the range 0 to 999 pixels. **Note:** This value will be ignored when the Auto Resize option is set to `Vertical` or `Both`.
Width	Sets the display width for the field. Valid values are in the range 0 to 999 pixels. **Note:** This value will be ignored when the Auto Resize option is set to `Horizontal` or `Both`.
Use Default	Use the default size to display the field. The Height and Width options will be ignored.

Label options

You can display a label next to each field in the screen. The Label options let you define the type, color and size of the text used for the label.

Tip: BPLs and Custom fields (excluding Label/Separator fields) do not normally required a label.

Label fields

This table describes the function of each field.

Field	Description
Auto Create Label	When selected, the Display Name specified for the field will be used as a label. **Note:** If selected you will need to allow an additional column for the label when specifying the Grid Position Width.
Text Type	Sets the type of the text used for the label.
Text Size	Sets the size of the text used for the label.
Text Colour	Displays text in the selected color for the label.

Screen Preview

You can preview the screen layout for a group of fields. This will help you to see what adjustments are needed to improve the screen layout.

Note: The preview is only an approximation of the screen layout which may appear slightly different on the real screen.

Previewing a subscriber screen

Follow these steps to preview how a group of fields will look in the Edit Subscriber screen.

Tip: You can display the Preview panel while making changes to the screen layout. Then you can refresh it as required by clicking **Refresh**.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.
2. On the **Subscriber Config** tab, select the **Product Type** from the drop down list.
3. In the panel on the left select the group that you want to preview.

   Tip: Double click on the node to see the list of groups assigned to the node, if these are not currently in view.
4. Click **Preview**.

   Result: You see the Previewing Panel for the selected group.
5. When you have finished previewing, click **Close**.

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Group Configuration

This chapter explains how to configure groups.

This chapter contains the following topics.

Group Configuration

Group Configuration

You configure groups on the **Group Configuration** tab on the Subscriber Profile Manager screen. Once you have configured a group, you can assign it to a tree node on the **Subscriber Config** tab or **Product Type Config** tab. You can then define which fields belong to the group.

Group Types

The Group Type determines whether the group can be assigned to a node in the Subscriber Config tree or Product Type Config Tree. The available group types are:

- Product Type
- Subscriber
- Sub-Group

Assigning groups to nodes

For details on assigning groups to nodes on the:

- Subscriber Config tree, see Subscriber Configuration
- Product Type Config tree, see Product Type Configuration
- Sub-Groups tree, see Sub-Group Configuration

Adding groups

Follow these steps to add a new group.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.
2. On the **Group Configuration** tab, click **New**.

   Result: You see the New Subscriber Profile Manager Group screen.
3. In the **Group Name** field, enter the name for this group.
4. Select the **Group Type** from the drop down list.
5. Click **Save**.

Related topic

Group Configuration

Editing groups

Follow these steps to edit an existing group.

Note: You cannot change the group type.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.
2. On the **Group Configuration** tab, select the group to edit.
3. Click **Edit.**

   Result: You see the Edit Subscriber Profile Manager Group screen.
4. Enter a new **Name** for the group if required.
5. Click **Save**.

Deleting groups

Follow these steps to delete a group.

Warning: You cannot delete a group if it is currently assigned to a node on the **Subscriber Config** tab, the **Product Type Config** tab, or the **Sub-Group Config** tab.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down box.
2. On the **Group Configuration** tab, select the group to delete.
3. Click **Delete**.

   Result: You see the Delete Confirmation prompt.
4. Click **OK**.

   Result: The record is deleted.

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Subscriber Configuration

This chapter explains how to configure the groups and fields available in the Prepaid Charging Edit Subscriber screens.

Note: Sub-groups are configured in the **Sub-Group Config** tab. Once the sub-group has been configured, you can add it to the Subscriber Config tree and the Edit Subscriber screen in the same way as adding a field.

This chapter contains the following topics.

Subscriber Config

Subscriber Panels

Subscriber Group Field Configuration

Profile Tag Fields

Subscriber Config

The **Subscriber Config** tab allows you to configure the Prepaid Charging Edit Subscriber screen. You can:

- Define which options will appear in the left hand menu on the screen
- Define the fields belonging to each group
- Configure how each field is displayed on the screen
- Define profile rules for the profile tag fields in each group

For more information about the Edit Subscriber screen, see Editing and Deleting Subscribers.

Profile rules

You can define a set of profile rules for the profile tag fields configured to appear in the Edit Subscriber and Edit Product Type screens. The profile rules are applied at run time to help prevent invalid data from being entered in profile tag fields.

For details on defining profile rules, see Rule Definition.

Subscriber config definitions

You can set up a subscriber config definition for a specific service provider, or for a specific service provider and product type combination. The configuration is applied to a Subscriber based on the product type specified for the subscriber's wallet.

Default product type

The default product type is `None`. The configuration defined for this product type is used where no specific configuration has been defined for the subscriber’s product type.

Set the default product type by selecting a product type from the **Product Type** drop down list at the top of the Subscriber Profile Manager screen.

Subscriber config rules

Here are the rules used to determine which subscriber config definition will be used to display subscriber information in the Edit Subscriber screen.

1. If the service provider and product type specified for the subscriber's wallet match a subscriber config product type definition, then this definition will be used.
2. If there is no match for the product type then the subscriber config definition for the service provider's default product type None will be used.

User access

The fields included in a subscriber group can be accessed in the Edit Subscriber screen provided the user has been given sufficient privileges.

User access permissions are managed through the User Templates defined in the SMS User Management screen. They can be set for all the fields in the subscriber group, or for selected fields.

This table describes the privileges that may be assigned to a field.

Privilege	Description
Read/Only	The field's value (if present) will be visible to the user through the screens, but they will not be able to edit, create, or delete it.
Read/Modify	The field's value (if present) will be visible to the user through the screens, and they will be able to edit it, but they will not be able to create or delete it.
Create/Delete	The field's value (if present) will be visible to the user through the screens, and they will be able to edit, create and delete it.
Execute	Valid for BPL tasks only. This BPL task will be visible to the user through the screens, and they will be able to execute it.

Note: For information on creating and maintaining user Templates, see *NCC SMS User's Guide*.

Note about including wallet information

Where secondary or shared wallets are to be used, you are strongly advised to design screens that place the wallet information on a separate panel. You should not include any specific subscriber details in this panel.

Here is a list of all the items that relate to the wallet and which should be configured to appear on a separate wallet panel. All other details fields, profile tags and profile panel information relate to the subscriber:

- Balances table panel
- Wallet expiry details panel

- Wallet history panel (wallet history and creation date)
- Wallet info panel
- Wallet state
- Product type

Example

To see the importance of keeping wallet information separate, consider these two scenarios:

1. A subscriber has both a primary and a secondary wallet. In this case there will be independent wallet information for each wallet, and a single set of subscriber information (profile panel, details fields, and any profile tags).
2. Two subscribers have independent primary wallets and a shared secondary wallet. In this case the two subscribers will have independent subscriber and primary wallet information, and therefore independent profile panel, details fields and profile tags. However, there will be a single set of wallet information for the shared secondary wallet. This means that the profile panel, details fields and profile tags displayed when a user accesses the secondary wallet, will depend on which subscriber is selected.

Subscriber Panels

The **Subscriber Config** tab enables you to define the groups in the Subscriber Panels node tree. The groups which are assigned to nodes in the tree, are displayed under the Subscriber option on the left hand panel in the Edit Subscriber screen.

Once the group is defined, you can:

- Define the set of fields belonging to the group for the selected Service Provider and Product Type
- Specify the screen layout for each field.

For more information about:

- Configuring the fields which are in the group, see Subscriber Group Field Configuration
- How the fields are displayed, see Layout Details

Assigning a group

To assign a group to a node in the Subscriber Config tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Subscriber Config tree, follow the procedure detailed in Editing a group assignment.

Deleting a group

To delete a group assigned to a node in the Subscriber Config tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Subscriber Group Field Configuration

You can add, edit and delete the fields belonging to a group assigned to a node in the **Subscriber Config** tab. These fields will be displayed on the Edit Subscriber screen under the option which corresponds to the group they are configured in.

If you include any profile tag fields in your configuration, then you can also define the profile rules that will be applied to the profile tag fields at run-time. For details, see Rule Definition.

Adding new field for Subscriber Config group

Follow these steps to add a field for a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. From the left hand panel on the **Subscriber Config** tab select the group that you want to add the field to.

   Tip: Double click on a node to see which groups are assigned to it, if these are not currently visible.
3. Click **New**.

   Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen name.
4. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.
5. If you are adding a:

Field Type	Specify These Database Fields
Database Field	• Display Name • Field • Type
BPL	• BPL
Profile Tag Field	• Display Name • Profile Tag Name • Date Type (if Tag field is a DATE)
Custom Field	• Display Name • Custom Type
Sub-Group	• Display Name • Sub-Group
Periodic Charge	• Display Name • Periodic Charge or Periodic Charge Group • Show Date Fields
Promotion Info Field	• Display Name • Promotion • Show Expiry Date

Field Type	Specify These Database Fields
Wallet Life Cycle Field	• Display Name

For more information, see Field Type fields.

6. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Subscriber screen.

   For more information on the layout details options, refer to Screen Layout (Field Type Definition and Layout, Subscriber Profile Manager Screen Layout).

7. Click **Save**.

Editing field from Subscriber Config group

Follow these steps to edit a field included in a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to edit is configured.

   Tip: Double click on a node to see which groups are assigned to it, if these are not currently visible.

3. Select the field on the grid and click **Edit**.

   Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

4. Edit the fields to reflect the changes you need to make.

   For more information about the fields at the top of this screen, see Field Type fields.

   For more information about the layout fields on this screen, see Layout Details.

5. Click **Save**.

Deleting a field

Follow these steps to delete a field from a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to delete is configured.

   Result: The grid will display the fields which have been configured for the group you have selected. For an example of this screen, see Subscriber Config tab - Details group.

3. Select the field you want to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The field is removed from the grid.

Profile Tag Fields

The facility to configure profile tag fields enables you to create customized fields which can then be:

- Accessed and populated through the CCP Dashboard, Edit Subscriber and Product Type screens
- Uused in control plans.

For more information about how profile fields are used in control plans, see *NCC CPE User's Guide*.

Topics:

Profile tags

Configuring Zone Profile Tags

Profile tags

The tag names for profile fields are defined on the **Profile Tag Details** tab in the ACS Configuration screen.

This table describes the supported data types for profile tags.

Profile Field Tag Type	Description
BOOLEAN	A single value: • True • False
BYTE	A single digit integer (signed).
DATE	A date.
INTEGER	An integer value (signed).
LNSTRING	A limited numeric string. Valid characters are 0-9. **Note:** The limits for LNSTRING field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
LOPREFIX	A limited ordered prefix tree. This is made up of a limited list of numbers. **Note:** The limits for LOPREFIX field values may be set for the Product Type (in the Product Type screen) and/or Service Provider (in Service Management, Resource Limits screen).
NSTRING	Numeric string. Valid characters are 0-9.
OPREFIX	An ordered prefix tree comprising an ordered list of numbers.
PREFIX	A prefix tree comprising a list of numbers.
STRING	A non limited ASCII string.

Profile Field Tag Type	Description
ZONE	A set of shape definitions for the area covered by the zone. Shapes may be circular or rectangular and are defined by their coordinates. **Note:** You can set up and populate zone tags but they may only be used if the Location Capabilities Pack (LCP) is installed.

Configuring Zone Profile Tags

You can define a set of zones that can be used to determine the location of a subscriber.

To define a zone, you must first define the zone profile group field using a ZONE profile tag.

ZONE profile tags are configured in ACS. The LCP ZONE profile tags, Home and Work, are all configured at installation. All other zone profile tags are user defined and must conform to the configuration shown in this table.

Profile Tag Name	Profile Tag Type	Profile Tag	Parent Profile Tag	Comment
LCP ZONES	Profile Block	4128769	NA	Configured during installation.
Home	ZONE	4128770	4128769	Configured during installation.
Work	ZONE	4128771	4128769	Configured during installation.
ZoneName	ZONE	An integer value in the range: 4128772 to 4194305	4128769	User defined. **Warning:** The parent profile tag must be set to 4128769 (the profile tag value for LCP ZONES).

For more information about profile tags, see *ACS User's Guide*.

22

Product Type Configuration

This chapter explains how to configure the Profile groups and fields available in the Edit Product Type screen in CCS.

This chapter contains the following topics.

Product Type Config

Product Type Panels

Product Type Field Configuration

Product Type Config

The **Product Type Config** tab lets you:

- Add, edit and delete the Profile group options available in the Edit Product Type screen
- Add, edit and delete the profile tag fields belonging to each group
- Configure the screen layout for each field
- Define the profile rules for the profile tag fields in each group

Profile rules

You can define a set of profile rules for the profile tag fields configured to appear in the Edit Subscriber and Edit Product Type screens. The profile rules are applied at run time to help prevent invalid data from being entered in profile tag fields.

For details on defining profile rules, see Rule Definition.

User access

The profile tag fields included in a Product Type Group can be accessed in the Edit Product Type screen provided the user has been given sufficient privileges.

User access permissions are managed through the User Templates defined in the SMS User Management screen. They can be set for all the fields in the group, or for selected fields.

This table describes the privileges that may be assigned to a field.

Privilege	Description
Read/Only	The field's value (if present) will be visible to the user through the screens, but they will not be able to edit, create, or delete it.
Read/Modify	The field's value (if present) will be visible to the user through the screens, and they will be able to edit it, but they will not be able to create or delete it.

Privilege	Description
Create/Delete	The field's value (if present) will be visible to the user through the screens, and they will be able to edit, create and delete it.

Note: For information on creating and maintaining user Templates, see the *SMS User's Guide*.

Product Type Panels

You assign Product Type groups to the Product Type Panels node on the **Product Type Config** tab. You can then:

- define the set of fields belonging to each group for the selected Service Provider and Product Type, and
- specify the screen layout for each field.

The **Product Type Config** tab enables you to define the groups in the Product Type Panels node tree. The groups which are assigned to nodes in the tree are displayed under the Profile Fields option on the left hand panel in the Edit Product Type screen.

Once the group is assigned, you can specify the screen layout for each field. For more information about:

- Configuring the fields which are in the group, see Product Type Field Configuration
- How the fields are displayed, see Layout Details

Assigning a group

To assign a group to a node in the Product Type Config tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Product Type Config tree, follow the procedure detailed in Editing a group assignment.

Deleting a group

To delete a group assigned to a node in the Product Type Config tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Product Type Field Configuration

You can add, edit and delete the fields belonging to a group assigned to the Product Type Panels node on the **Product Type Config** tab. All the fields in the group must be either:

- profile tag fields, or
- custom profile fields.

If you include any profile tag fields in your configuration, then you can also define the profile rules that will be applied to the profile tag fields at run-time.

The following types of profile field are available to product types:

- DATE
- BOOLEAN
- BYTE
- INTEGER
- PREFIX
- OPREFIX
- STRING
- NSTRING
- DISCOUNT
- PATTERNS
- ZONE (the profile tag must be in the range 4128770 to 4194303)

You cannot include LOPREFIX profile fields in product type configurations.

Note: For more information on profile tag fields, see Profile Tag Fields. For details on defining profile rules, see Rule Definition.

Custom profile fields

Custom profile fields provide the facility to define profile tag fields where the data type is selected from a list of predefined Custom Types.

You can use custom profile fields to store the following items. The stored values can then be used in control plans:

- Balance Cascade name
- Domain name
- Product Type name
- Tariff Plan name, and
- Voucher Type name.

Adding new field for Product Type group

Follow these steps to add a field to a group in the Product Type Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. From the Product Type Panels list on left hand side of the **Product Type Config** tab, select the required group.

   Tip: Double click on the Product Type Panels node to see which groups are assigned to it, if these are not currently visible.
3. Click **New**.

Result: You see the New Field for Group screen. The name of the currently selected group is appended to the screen name.

4. In the **Field Type** drop down box select either:
   - Profile Tag Field, or
   - Custom Profile Field
5. In the **Display Name** field, type the label you want to appear next to the field in the Edit Product Type screen.

   Note: This label is only displayed if **Auto Create Label** is ticked.
6. From the **Profile Tag Name** drop down list, select the profile tag field you want to add.
7. If you are adding a Custom Profile Field, select the Custom Type from the drop down list of available custom types.

   If you are adding a DATE type Profile Tag Field, select the Date Type from the drop down list of available date types.
8. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Product Type screen.

   For more information on the layout details options, refer to Layout Details.
9. Click **Save**.

Editing field from Product Type group

Follow these steps to edit a field included in a group in the Product Type Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.
2. From the Product Type Panels list on left hand side of the **Product Type Config** tab, select the required group.

   Tip: Double click on the Product Type Panels node to see which groups are assigned to it, if these are not currently visible.
3. Select the field on the table and click **Edit**.

   Result: You see the **Editing Field from Group** screen. The name of the currently selected group is appended to the screen name.
4. Edit the fields to reflect the changes you need to make.

   For more information about the fields at the top of this screen, see Field Type fields.

   For more information about the layout fields on this screen, see Layout Details.
5. Click **Save**.

Deleting a field

Follow these steps to delete a field from a group in the Subscriber Config tree.

1. In the Subscriber Profile Manager screen, select the **Service Provider** and **Product Type** you require from the drop down lists.

2. From the left hand panel on the **Subscriber Config** tab, select the group where the field to delete is configured.

   Result: The grid will display the fields which have been configured for the group you have selected. For an example of this screen, see Subscriber Config tab - Details group.

3. Select the field you want to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

4. Click **OK**.

   Result: The field is removed from the grid.

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Profile Rules

This chapter explains how to define profile rules.

This chapter contains the following topics.

Rule Definition

Rule Definition

You can define sets of profile field rules to associate with the profile tag fields available in the Edit Subscriber and Edit Product Type screens. The rules will be evaluated when you open either the Edit Subscriber or the Edit Product Type screen, and applied immediately prior to saving them.

Profile field rules are:

- Defined on the **Subscriber Config** and **Product Type Config** tabs
- Associated with specific profile tag fields that have been configured to appear in either the Edit Subscriber or Edit Product Type screen
- Used in the screens to control the data entered into the profile tag fields. Only data that conforms to the rules will be accepted.

Topics:

Profile rule fields

Adding a new rule

Editing a rule

Deleting a rule

Profile rule fields

This table describes the function of each field.

Field	Description
Rule Name	The name of the rule.
SPM Component	The SPM component that this rule applies to. This will be a profile tag field included in the currently selected group of fields. The following types of profile tag field are supported: • DATE • INTEGER • NSTRING • STRING

Field	Description
Comparator	The type of compare operation to perform. Valid values are: • = (Equal to) • != (Not equal to) • < (Less than) • <= (Less than or equal to) • > (Greater than) • >= (Greater than or equal to) • Range (Range of values)
Use Profile fields	Profile fields apply to rules that have been configured to compare the SPM Component against a profile field value or range of values. These fields can be configured when the Use Profile Fields option is selected.
Profile Field	The profile field containing the value to compare against. If the Range comparator is being used, then this will be the minimum value allowed.
Profile Field Max	If the Range comparator is being used, then this profile field contains the maximum value allowed in the range. Otherwise, this field will be disabled.
Compare Profile Block	Identifies the profile block containing the profile fields to use in the compare operation. Valid values are: • Product Type Profile • Subscriber Profile • Service Profile
Allow when profile field value unavailable	When set, the rule will be passed even if the specified profile field data is not available.
Use Fixed Value - Integer fields	Integer fields apply to rules that have been configured to compare the SPM Component against a fixed value or range of fixed values. These fields can be configured when: • the SPM Component field type is either INTEGER or NSTRING, and • the Use Fixed Value option as been selected.
Integer Value	The numeric value to compare against. If the Range comparator is being used, then this sets the minimum value allowed in the range.
Integer Value Max	If the Range comparator is being used, then this sets the maximum value allowed in the range. Otherwise this field is disabled.
Use Fixed Value - Date fields	Date fields apply to rules that have been configured to compare the SPM Component against a specific date or range of dates. These fields can be configured when: • the SPM Component field type is DATE, and • the Use Fixed Value option has been selected.

Field	Description
Date Value	The date to compare against. If the Range comparator is being used, then this sets the start date for the range. Dates may be entered using the following formats: • dd-Mon-yyy hh:mm:ss • dd-Mon-yyyy For details on selecting a date, see Time and Date panels.
Date Value Max	If the Range comparator is being used, then this sets the end date for the range. Otherwise this field is disabled.
Use Date And Time	Allows you to set an exact time for the specified date.
Use Run-Time Date	When set, the SPM Component will be compared against the current system time at run-time. **Note:** Setting this option disables the Compare Against fields.

Adding a new rule

Follow these steps to add a new profile rule definition for a Subscriber or Product Type group.

1. Select either the **Subscriber Config** tab, or the **Product Type Config** tab, as required.
2. In the Config tree, select the group you want to add the new rule definition to.

   Result: In the bottom part of the screen you see a grid listing the rules that are currently defined for the group.
3. Click **New Rule**.

   Result: You see the New Profile Rule for Group - <group> screen.
4. Configure this record by entering data in the fields on this screen.

   For more information about the fields on this screen, see Profile rule fields.

   Note: The fields available in the Compare Against area will depend on the field type of the SPM Component and which of the following options you selected:

   - Use Fixed Value
   - Use Profile Fields, or
   - Use Run-Time Date
5. If you selected the **Use Profile Fields** option and you want the rule to be passed even if the selected profile fields are not available, then tick the **Allow when profile field value unavailable** check box.
6. Click **Save**.

Related topic

Rule Definition

Editing a rule

Follow these steps to edit a profile rule definition for a Subscriber or Product Type group.

1. Select either the **Subscriber Config** tab, or the **Product Type Config** tab, as required.
2. In the Config tree, select the group where the profile rule to edit is defined.

   Result: In the bottom part of the screen you see a grid listing the rules that are currently defined for the group.
3. Select the rule to edit in the grid, and click **Edit Rule**.

   Result: You see the Editing Profile Rule for Group - *Group* screen.
4. Edit the fields on this screen to reflect the changes you need to make.

   For more information about the fields on this screen, see Profile rule fields.

   Note: The fields available in the Compare Against area depend on the field type of the SPM Component and which of the following options have been selected:

   - Use Fixed Value
   - Use Profile Fields
   - Use Run-Time Date
5. If you selected **Use Profile Fields**, to ensure the rule is passed even when the selected profile field is not available, select the **Allow when profile field value unavailable** check box.
6. Click **Save**.

Related topic

Rule Definition

Deleting a rule

Follow these steps to delete a profile rule.

1. Select the **Subscriber Config** tab or the **Product Type Config** tab as required.
2. Select the group in the config tree where the rule to delete is defined.

   Result: In the bottom part of the screen you see the rules currently defined for the group listed in the grid.
3. On the grid, select the rule you want to delete.
4. Click **Delete Rule**.

   Result: You see the Delete Confirmation prompt.
5. Click **OK**.

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CCP Dashboard Configuration

This chapter explains how to configure the CCP Dashboard, using Oracle Communications Network Charging and Control Subscriber Profile Manager.

This chapter contains the following topics.

Subscriber Table

Quick View

Vouchers

Common Tasks

Subscriber Table

The Subscriber Table option on the **CCP Dashboard Config** tab lets you configure the subscriber search panel and search results panel in the CCP Dashboard.

Tip: If more than one Service Provider is using the service, you can specify a different configuration for each one.

Search fields

You select which fields will be available in the Subscriber Search panel from the list of available search fields. The following predefined search fields are provided:

- Card Number
- Customer, and
- Wallet Reference.

You can also define your own subscriber search fields. See Adding a new search key for details.

Note: The data needed to locate a subscriber based on a customized search key field must be generated using the PI. For more information see *NCC PI Commands Guide*.

Adding a new search key

Follow these steps to add a new search key field to the Subscriber Table.

1. In the Search Fields area on the Subscriber Table option of the **CCP Dashboard Config** tab, click **New**.

   Result: You see the New Search Key screen.

2. In the **Key Name** field, type the internal name for the key. This will be used by the search mechanism to locate matching subscriber records.

   Note: Letters must be typed in lower case.

3. In the **Display Name** field, type the name to use to display the key in the screens.

   Note: This name is also used by the PI command.

4. If the key can have multiple values, tick the **Allow Duplicate Keys** check box. For example, an address field used as a Search Key could have a duplicate key for each line in the address.
5. If Allow Duplicate Keys is selected, select the **Maximum Duplicate Keys**. A key may have up to 9 duplicates.
6. Click **Save**.

Related topic

Subscriber Table

Editing a search key

Follow these steps to edit a search key in the Subscriber Table.

Note: The **Key Name** value cannot be changed.

1. Select the Subscriber Table option on the **CCP Dashboard Config** tab.
2. In the Search Fields area, select the user defined search key to change and click **Edit**.

   Note: You will only be able to edit a search key if it is included in the Available List. To edit a search key from the Selected List, first move it to the Available List.

   Result: You see the Edit Search Key screen.
3. Type a new **Display Name** for the search key if required.
4. Tick or clear the **Allow Duplicate Keys** check box, as required.
5. If Allow Duplicate Keys is selected, edit the **Maximum Duplicate Keys** value as required.
6. Click **Save**.

Deleting a search key

Follow these steps to delete a search key field from the Subscriber Table.

Note: A search key may only be deleted if it is not in use.

1. Select the Subscriber Table option on the **CCP Dashboard Config** tab.
2. Select the user defined search key you want to delete from the Available List in the Search Fields panel, and click **Delete**.

   Result: You see the Delete Confirmation prompt.
3. Click **OK**.

   Result: The search key is removed from the Available List.

Configuring the subscriber search panel

Follow these steps to configure which fields are displayed in the Subscriber Search Panel in the CCP Dashboard.

Note: You can display a maximum of three search fields in the Search Panel in addition to the Subscriber ID, which is always present.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down list.
2. Select the Subscriber Table option on the **CCP Dashboard Config** tab.

   Result: You see the **Search Fields** area in the top half of the screen.
3. Edit the **Selected List** as required. To:
   - Add a field to the list, select the field in the Available List, and click '**>**'.
   - Remove a field from the list, select the field in the Selected List, and click '**<**'.

   Tip: To remove all the selected fields from the list, click '**<<**'.
4. Order the fields in the Selected List as required. This will determine the order in which the fields appear in the search panel in the CCP Dashboard.

   To:
   - Move a field up the list, select it in the Selected List, and click **Up**.
   - Move a field down the list, select it in the Selected List, and click **Down**.
5. Click **Save**.

   Result: You see the Configuration Saved confirmation.
6. Click **OK**.

Configuring the subscriber search results

Follow these steps to configure which columns appear in the subscriber search results grid in the CCP Dashboard.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down list.
2. Select the Subscriber Table option on the **CCP Dashboard Config** tab.

   Result: You see the Display Columns panel in the bottom half of the screen.
3. Edit the **Selected List** as required. To:
   - Add a column to the list, select the column in the Available List, and click '**>**'.
   - Add all the available columns to the list, click '**>>**'.
   - Remove a column from the list, select the column in the Selected List, and click '**<**'.
   - Remove all the selected columns from the list, click '**<<**'.

   Note: The Display Columns panel will include any user defined search key fields.
4. Order the fields in the Selected List as required. This will determine the order in which columns appear in the subscriber search results grid in the CCP Dashboard.

   To:
   - Move a column up the list, select it in the Selected List, and click **Up**.
   - Move a column down the list, select it in the Selected List, and click **Down**.
5. Click **Save**.

   Result: You see the Configuration Saved confirmation.

6. Click **OK**.

Defining the default sort column

Follow these steps to define the default sort column to use to order subscriber search results in the CCP Dashboard screen.

1. Select the Subscriber Table option on the **CCP Dashboard Config** tab.
2. In the Selected List in the Display Columns panel, select the column name to sort on.
3. Click **Set Default Sort Column**.

   Result: The column name appears in the Default Sort Column field.
4. Click **Save**.

   Result: You see the Configuration Saved confirmation.
5. Click **OK**.

Quick View

The Quick View option on the **CCP Dashboard Config** tab lets you configure which fields are displayed in the Quick View panel in the CCP Dashboard.

Tip: If more than one Service Provider is using the service, you can specify a different configuration for each one.

Quick view field types

This table describes the field types that may be included in the Quick View panel.

Field Type	Description	Additional Information
Custom Field	This is a predefined Group of fields.	NA
Database Field	This is a standard field defined in the CCS database.	*NCC CCS User's Guide*
Profile Tag Field	This is a profile tag defined in the ACS Configuration screen.	Profile Tag Fields
Search Key Field	This is a user defined search field configured in the Search Fields panel.	Subscriber Table
Sub-Group	This is a group of fields included in a Sub-Group on the Subscriber Config tree.	Sub-Group Configuration

Adding a quick view field

Follow these steps to add a field to the Quick View.

1. Select the Quick View option on the **CCP Dashboard Config** tab and click **New**.

   Result: You see the New Field for Group - Quick View screen.
2. Select the **Field Type** from the drop down box.

Result: You see the field configuration options for the selected field type in the panel below.

3. If you are adding a Database or Search Key field, then specify the:
   - Display Name
   - Field, and
   - Type.

   If you are adding a Profile Tag Field, then specify the:
   - Display Name
   - Profile Tag Name, and
   - Data Type.

   If you are adding a Custom Field, then specify the:
   - Display Name, and
   - Custom Type.

   If you are adding a Sub-Group, then specify the:
   - Display Name, and
   - Sub-Group.

   For more information, see Field Type fields.
4. Specify the **Layout Details** for the field. This will determine where the field will appear in the Quick View panel.

   For more information on the layout details options, refer to Screen Layout (Field Type Definition and Layout, Subscriber Profile Manager Screen Layout).
5. Click **Save**.

Editing a quick view field

Follow these steps to edit a field included in the Quick View panel.

1. Select the field you want to edit on the Quick View grid in the **CCP Dashboard Config** tab and click **Edit**.

   Result: You see the Editing Field from Group - Quick View screen.
2. Edit the fields to reflect the changes you need to make.

   For more information about the:
   - Fields at the top of this screen, see Field Type fields
   - Layout fields on this screen, see Layout Details
3. Click **Save**.

Deleting a quick view field

Follow these steps to delete a field from the Quick View panel.

1. Select the field to delete on the quick view grid in the **CCP Dashboard Config** tab and click **Delete**.

Result: You see the Delete Confirmation prompt.

2. Click **OK**.

Previewing the quick view panel

Follow these steps to preview how the configured fields will appear in the Quick View panel in the CCP Dashboard.

1. Select the Quick View option of the **CCP Dashboard Config** tab.
2. Click **Preview**.

   Result: You see the Previewing Panel screen for the Quick View.
3. When you have finished previewing the screen, click **Close**.

   Result: The Preview Panel closes and you are returned to Quick View.

   Tip: To see an updated Preview Panel at any stage during the editing process, keep the Preview Panel open and click **Refresh**.

Vouchers

The Vouchers option in the **CCP Dashboard Config** tab lets you configure the contents and layout of the Vouchers panel in the CCP Dashboard.

Tip: If more than one Service Provider is using the service, you can specify a different configuration for each one.

Adding vouchers panel fields

Follow these steps to add a field to the Vouchers panel.

Note: You may only add database fields to the Vouchers panel.

1. Select the Vouchers option from the left hand panel on the **CCP Dashboard Config** tab and click **New**.

   Result: You see the New Field for Group - Vouchers screen.
2. In the **Display Name** field, type the label you want to appear next to the field in the Vouchers panel.

   Note: This label is only displayed if Auto Create Label is selected.
3. Select the Database Field you want to add from the **Field** drop down list.

   Note: Only fields relevant to the Vouchers panel will be available.
4. Select the data entry **Type** method from the drop down list. This determines the type of data entry box used to display the field in the Preview panel.
5. Specify the **Layout Details** for the field. This will determine where the field will appear on the Vouchers panel.

   For more information on the layout details options, refer to Layout Details.
6. Click **Save**.

Editing vouchers panel fields

Follow these steps to edit the configuration of a vouchers field in the Vouchers panel in the CCP Dashboard.

1. Select the field you want to edit on the vouchers grid in the **CCP Dashboard Config** tab and click **Edit**.

   Result: You see the Editing Field from Group - Vouchers screen.
2. Modify the **Display Name** as required.
3. Select a different **Field** from the drop down list if required.
4. Modify the **Layout Details** as required.

   For more information on the layout details options, refer to Layout Details.
5. Click **Save**.

Deleting a vouchers field

Follow these steps to delete a field from the Vouchers panel in the CCP Dashboard.

1. Select the field to delete on the vouchers grid in the **CCP Dashboard Config** tab and click **Delete**.

   Result: You see the Delete Confirmation prompt.
2. Click **OK**.

Previewing vouchers

Follow these steps to preview how the configured fields will appear in the Vouchers panel in the CCP Dashboard.

1. Select the Vouchers option of the **CCP Dashboard Config** tab.
2. Click **Preview**.

   Result: You see the Previewing Panel screen for Vouchers.
3. When you have finished previewing the screen, click **Close**.

   Result: The Preview Panel closes and you are returned to Vouchers configuration.

Common Tasks

The Common Tasks option in the **CCP Dashboard Config** tab lets you add, edit and delete the Common Tasks (BPLs) available in the Common Tasks panel in the CCP Dashboard.

Tip: If more than one Service Provider is using the service, you can specify a different configuration for each one.

Accessing the Common Tasks option

Follow these steps to access the Common Tasks option on the **CCP Dashboard Config** tab.

1. In the Subscriber Profile Manager screen, select the **Service Provider** from the drop down list.
2. Select the **CCP Dashboard Config** tab.

   Result: You see the list of Dashboard options in the left hand panel.
3. Select the Common Tasks option.

   Result: You see the BPL tasks currently defined for the Common Tasks panel listed on the table.

Adding common tasks

Follow these steps to add a BPL to the Common Tasks panel in the CCP Dashboard.

1. Select the Common Tasks option from the left hand panel on the **CCP Dashboard Config** tab and click **New**.

   Result: You see the New Field for Group - Common Tasks screen.
2. Select the **BPL** you want to add from the drop down list.

   Note: Business Process Logic is the preselected Field Type for the Common Tasks group and this cannot be changed.
3. Specify the **Layout Details** for the BPL. This will determine where the field will appear on the Common Tasks panel.

   For more information on the layout details options, refer to Screen Layout (Field Type Definition and Layout, Subscriber Profile Manager Screen Layout).

   Note: If Auto Create Label is selected then the BPL name will be displayed next to the BPL button.
4. Click **Save**.

Editing common tasks

Follow these steps to edit the available BPL tasks in the Common Tasks panel in the CCP Dashboard.

1. Select the BPL field to edit on the common tasks grid in the **CCP Dashboard Config** tab and click **Edit**.

   Result: You see the Editing Field from Group - Common Tasks screen.
2. Select a different **BPL** from the drop down list if required.
3. Modify the **Layout Details** as required.

   For more information on the layout details options, refer to Layout Details.
4. Click **Save**.

Deleting common tasks

Follow these steps to delete a BPL from the Common Tasks panel in the CCP Dashboard.

1. Select the BPL to delete on the common tasks grid in the **CCP Dashboard Config** tab and click **Delete**.

Result: You see the Delete Confirmation prompt.

2. Click **OK**.

Previewing common tasks

Follow these steps to preview how the configured BPLs will appear in the Common Tasks panel in the CCP Dashboard.

1. Select the Common Tasks option in the left hand panel of the **CCP Dashboard Config** tab.
2. Click **Preview**.

   Result: You see the Previewing Panel screen for Common Tasks.
3. When you have finished previewing, click **Close**.

   Result: The Previewing Panel screen closes and you are returned to Common Tasks.

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Sub-Group Configuration

This chapter explains how to configure sub-groups.

This chapter contains the following topics.

Sub-Groups

Sub-Group Field Configuration

Sub-Groups

Sub-groups groups are used to define a set of fields which can be displayed on the Edit Subscriber screen and/or the CCP Dashboard.

Sub-groups can be used as templates in the **Subscriber Config** and CCP Dashboard **Config** tabs.

Assigning a group

To assign a group to a node in the Sub-Groups tree, follow the procedure detailed in Assigning a group to a node.

Editing a group assignment

To edit the assignment of a group to a node in the Sub-Groups tree, follow the procedure detailed in Editing a group assignment.

Deleting sub-group groups

To delete a group assigned to a node in the Sub-Groups tree, follow the procedure detailed in Deleting a group.

Warning: You cannot delete a group that has had fields added to it. Any fields included in the group must be removed from the group before you attempt to delete it.

Sub-group Group fields

This table describes the function of each field.

Field	Description
Group Name	The name of the group. This drop down list is populated by the **Group Configuration** tab, and defines the label of the group which will appear on the Edit Subscriber screen or CCP Dashboard.
Group Order	This number controls the order the sub-groups will be displayed in in the **Sub-Group Configuration** tab. **Note:** Groups that have the same group order number will be ordered alphabetically.

Sub-Group Field Configuration

You can add, edit and delete the fields belonging to a sub-group assigned to a node in the **Sub-Group Configuration** tab. These fields will be displayed in the sub-group when it is displayed on the Edit Subscriber screen or the CCP Dashboard screen.

Note: To display the sub-group on the Edit Subscriber screen, you must add the sub-group as a field on the **Subscriber Config** tab. For more information, see Adding a new field. To display the sub-group on the CCP Dashboard screen, you must add the sub-group as a field on the CCP Dashboard **Config** tab. For more information, see Quick View.

Adding new field for Sub-Group group

Follow these steps to add a field for a sub-group group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type this sub-group will be available for.
2. Select the **Sub-Group Configuration** tab.
3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group to add a field to.

   Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

   Note: The grid will only display the fields which have been configured for the selected sub-group for the service provider and product type combination selected in step 1.
4. Click **New**.

   Result: You see the **New Field for Group** screen. The name of the currently selected group is appended to the screen name.
5. Select the **Field Type** from the drop down box.

   Result: You see the field configuration options for the selected field type in the panel below.
6. If you are adding a database field, specify:
   - **Display Name**
   - **Field**
   - **Type**

   If you are adding a BPL task, then select the BPL task name.

   If you are adding a profile tag field, then specify:
   - **Display Name**
   - **Profile Tag Name**
   - **Data Type**

   Note: You can add the following types of profile field to a sub-group: DATE, BOOLEAN, BYTE, INTEGER, PREFIX, OPREFIX, STRING, NSTRING,

DISCOUNT, PATTERNS, ZONE (the profile tag must be in the range 4128770 to 4194303). You cannot add LOPREFIX profile fields to a sub-group configuration.

If you are adding a custom field, then specify:

- **Display Name**
- **Custom Type**

If you are adding a Periodic Charge, then specify:

- **Display Name**
- **Periodic Charge**
- **Show Date Fields**

For more information, see Field Type fields.

7. Specify the **Layout Details** for the field. This will determine where the field will appear on the group panel in the Edit Subscriber screen.

   For more information on the layout details options, refer to Layout Details.

8. Click **Save**.

Editing field from Sub-Group group

Follow these steps to edit a field in a sub-group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type the sub-group to change is associated with.
2. Select the **Sub-Group Configuration** tab.
3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group which contains the field to edit.

   Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

4. Select the field on the grid and click **Edit**.

   Result: You see the Editing Field from Group screen. The name of the currently selected group is appended to the screen name.

5. Edit the fields to reflect the changes you need to make.

   For more information about the fields at the top of this screen, see Field Type fields.

   For more information about the layout fields on this screen, see Layout Details.

6. Click **Save**.

Deleting a field

Follow these steps to delete a field from a sub-group.

1. In the Subscriber Profile Management screen, select the Service Provider and Product Type the sub-group to remove is associated with.
2. Select the **Sub-Group Configuration** tab.
3. In the Sub-Groups config tree on the left-hand side of the screen, select the sub-group which contains the field to delete.

Result: The grid will display the fields which have been configured for the sub-group you have selected. For an example of this screen, see Sub-Group Configuration tab - fields.

4. Select the field to delete on the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

5. Click **OK**.

   Result: The field is removed from the grid.

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Copying and Deleting Configuration

This chapter explains how to copy and delete configuration.

This chapter contains the following topics.

Copying Configuration

Deleting Configuration

Copying Configuration

The Copy function allows you to copy the SPM configuration defined for the currently selected service provider and product type to a new service provider and/or product type.

Note: You can only copy periodic charges to a new product type with the same service provider, not to a new service provider.

Follow these steps to copy the configuration for a selected Service Provider and Product Type.

Note: The copy operation will only copy the configuration for the tab you have selected.

1. In the Subscriber Profile Manager screen, select the **Service Provider** that you want to copy from.
2. From the drop down list, select the **Product Type** you want to copy from.

   Note: Product type selection is disabled from the CCP Dashboard and Group Configuration tabs. To enable product type selection, click on the **Subscriber Config**, **Product Type Config**, or **Sub-Group Configuration** tabs.
3. Select the tab of the records to copy.

   To copy:

   - Edit Subscriber screen configuration, select the **Subscriber Config** tab.
   - Edit Product Type screen configuration, select the **Product Type Config** tab.
   - Sub-Groups, select the **Sub-Group Configuration** tab.
4. Click the **Copy <data>** button at the top of the screen.

   Result: You see the Copy Configuration screen showing details of the records you can copy with this operation.
5. To copy the configuration to a different Service Provider, select the new **Service Provider** from the drop down list.

   Note: Selecting a new Service Provider means that the CCP Dashboard configuration will also be copied.
6. Select the **Product Type** from the drop down list to which the configuration will be copied.

   Warning: You will not be able to copy configuration to a Product Type for which configuration has already been defined.

7. Click **Copy**.

Deleting Configuration

The Delete Configuration function allows you to return some of the configuration for the currently selected Service Provider to the initial defaults.

Notes:

- There are no defaults for product type and sub-group configuration, so returning to defaults will delete all existing configuration for those types of records.
- You cannot delete the configuration defined for the Boss Service Provider.

Returning subscriber configuration to defaults

Follow these steps to return the subscriber configuration for a selected Service Provider to the defaults.

Note: Returning subscriber configuration does not delete any sub-groups which are used by the subscriber configuration.

1. In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.
2. Select the **Subscriber Config** tab.
3. Click **Reset Subscriber to Defaults**.

   Result: You see the Reset to Defaults Confirmation prompt.
4. Click **OK**.

   Result: The unique Edit Subscriber screen configuration defined for the Service Provider and all its associated Product Types is deleted.

Deleting product type configuration

Follow these steps to delete the Edit Product Type screen configuration for a selected Service Provider.

1. In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.
2. Select the **Product Type Config** tab.
3. Click **Reset Product Type to Defaults**.

   Result: You see the Reset to Defaults Confirmation prompt.
4. Click **OK**.

   Result: The Edit Product Type screen configuration defined for the Service Provider and all its associated Product Types is deleted.

Deleting sub-group configuration

Follow these steps to delete the Sub-groups configuration for a selected Service Provider.

Note: If the sub-groups are used for either Edit Subscriber screen configuration or CCP Dashboard screen configuration, you will not be able to delete them.

1. In the Subscriber Profile Manager screen, select the **Service Provider** whose configuration you want to delete.
2. Select the **Sub-Group Configuration** tab.
3. Click **Delete Sub-Group Configuration**.

   Result: You see the Reset to Defaults Confirmation prompt.
4. Click **OK**.

   Result: The Sub-Group configuration defined for the Service Provider and all its associated Product Types is deleted.

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User Access

This chapter explains the access permissions that must be given to a CSR or other user before they will be able to access the CCP Dashboard and Edit Subscriber screens through the CCP or CCS.

This chapter contains the following topics.

Access Permissions

User Management

Read Only Access

Access Permissions

Before a CSR or other user can view or edit subscribers in the CCP Dashboard and Edit Subscriber screens, they must be given appropriate screen access permissions. Access for an individual user must be set at the following levels:

- Service Provider
- Product Type.

Service provider access

For each Service Provider, you must assign appropriate access permissions to each eligible user. This gives the user access to the CCP Dashboard screen as configured for the specific Service Provider. In addition it will give them access to the Edit Subscriber screen as configured for the default product type, `None`.

Product type access

Where the Edit Subscriber screen has been configured for a specific product type, you must assign appropriate access permissions to each eligible user on a product type basis. This gives the user access to the Edit Subscriber screen as configured for the specific product type for subscribers with this product type.

Default product type

The default product type is `None`. The configuration defined for this product type is used where no specific configuration has been defined for the subscriber's product type.

Set the default product type by selecting a product type from the **Product Type** drop down list at the top of the Subscriber Profile Manager screen.

User Management

User access permissions are managed through the User Templates defined in the SMS User Management screen.

Note: For details on defining user templates, see the *SMS User's Guide*.

Permission groups

This table describes the permission groups that will give a user access to the information in the CCP Dashboard and Edit Subscriber screens when included in their user template.

Access permissions	Description
CCP_Dashboard	Provides access to the contents of the CCP Dashboard screen.
SPM	Provides access to the CCP Dashboard and Edit Subscriber screens. Access to individual fields must be defined at the service provider level, and may also be defined for individual product types.

Privileges

This table describes the privileges that may be assigned to items in the SMS User Management screen.

Privilege	Description
Access	The item (screen, panel or field) will be visible to the user through the screens.
Read/Only	The field's value (if present) will be visible to the user through the screens, but they will not be able to edit, create, or delete it.
Read/Modify	The field's value (if present) will be visible to the user through the screens, and they will be able to edit it, but they will not be able to create or delete it.
Create/Delete	The field's value (if present) will be visible to the user through the screens, and they will be able to edit, create and delete it.
Execute	Valid for BPL tasks/Common Tasks. The button will be visible to the user through the screens, and they will be able to execute it. Execute privilege is also required for the Voucher Redeem and Voucher Recharge buttons in the CCP Dashboard screen.

Read Only Access

You can define a user template that provides the user with read only screen access by setting all SPM permissions to Access or ReadOnly.

Note: A read only user may be able to execute common tasks and credit transfers. However, it is important to ensure that the option to save prior to executing a common task or credit transfer is disabled since this action is not relevant for read only users.

Disabling save and execute

To ensure the **Save & Execute** button is disabled in the Confirm Execute <task> dialog box, set the following CCS permissions to ReadOnly:

- Account Edit *balance*
- Account Edit *bpl*
- Account Edit *Service*
- Account Edit tab

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Best Friend Configuration Example

This chapter explains all the necessary configuration required to set up a Best Friend option for Subscribers. It is intended to provide you with an example of how the Oracle Communications Network Charging and Control Subscriber Profile Manager may be used to customize the features available to Subscribers within the CCP Dashboard and CCS.

This chapter contains the following topics.

Best Friend Option

Profile Tag Configuration

Product Type Configuration

SPM Configuration

Product Type Limitations

User Permissions

Control Plan Configuration

Best Friend Option

The following topics provide an example of how you can use the SPM to customize the CCP Dashboard and CCS screens to add a Best Friend option. This option gives you the ability to specify a best friend number for Subscribers, which when dialed may be charged at a preferential rate.

Configuration procedure – Best Friend Option

Here are the basic steps required to provide the facility for a CSR to manage Best Friend numbers through the CCP Dashboard and Edit Subscriber screens.

1. Define the Best Friend profile tag in ACS.
2. Map the Best Friend profile tag to the App Specific 1 profile block type in ACS.
3. Define the Product Type that will include the Best Friend configuration in CCS.
4. Configure the Quick View and Edit Subscriber screens to include the Best Friend field in the SPM.
5. Define what limits will be placed on the Best Friend number on a Product Type basis.
6. Add screen and field access permissions to the user templates.
7. Configure the control plan used for routing a Subscriber's calls to handle calls to the Best Friend number.

Profile Tag Configuration

To provide Subscribers with the ability to specify a best friend number you must first configure a best friend profile tag in ACS.

Adding best friend profile tag

Follow these steps to add a best friend profile tag in ACS.

1. Select the **Profile Tag Details** tab on the ACS Configuration screen.
2. In the grid on the tab, check the numbers listed in the Profile Tag column to determine what the next free number is.
3. Click **New**.

   Result: You see the New Profile Tag screen.
4. In the **Profile Tag Name** field, type the name for the best friend profile tag.
5. From the **Profile Tag Type** drop down list, select `Limited Numeric String`.
6. In the **Profile Tag** field, type in the unique number determined at step 2.
7. Leave the **Parent Profile Tag** field blank.
8. Leave the **Parameter Type** as `Input`, and click **Save**.

Mapping best friend profile tag

Follow these steps to map the best friend profile tag to the profile block associated with Subscribers.

1. Select the **Profile Tag Mapping** tab on the ACS Configuration screen.
2. Click **New**.

   Result: You see the New Tag/Profile Mapping screen.
3. From the **Profile Block** drop down list, select `App Specific 1`. This is the profile block associated with the subscriber.
4. From the **Profile Tag** drop down list, select the `Best Friend` profile tag you created earlier.
5. Click **Save**.

Product Type Configuration

You may want to define a specific Product Type for Subscribers who will be given the option to have a best friend number. First you add the Product Type configuration in the Subscriber Management screen. Then you can configure the CCP Dashboard and Edit Subscriber screens to include the Best Friend Profile Tag field.

Adding a product type

Follow these steps to add a Product Type for the best friend option.

Note: This procedure describes the minimum steps required to configure the Product Type. For more information on configuring Product Types, see the *NCC CCS User's Guide*.

1. Open the **Subscriber Management** screen.
2. From the **Service Provider** drop down list, select the Service Provider you want.
3. Select the **Product Type** tab and click **New**.

   Result: You see the New Product Type screen, Name And Periods configuration fields.
4. In the **Name** field, type a name for the best friend Product Type.
5. In the **Description** field, type a description for the Product Type.
6. Select the Control Plans option on the left hand panel.

   Result: You see the Control Plans configuration fields.
7. Click **New**.

   Result: You see the New Control Plan screen.
8. From the **CCS Capability** drop down list, select the CCS Capability for the Product Type.
9. Click **Apply**.

   Result: You are returned to the New Product Type screen.
10. Click **Save**.

SPM Configuration

In the SPM configure the CCP Dashboard and Edit Subscriber screens so that they include the Best Friend profile tag field.

Configuring quick view in SPM

Follow these steps to add the Best Friend profile tag field to the Quick View screen in the SPM.

1. In the Subscriber Profile Manager screen, select the Service Provider you want from the drop down list.
2. From the left hand menu on the **CCP Dashboard Config** tab, select the Quick View option.

   Result: You see the list of fields included in the Quick View default configuration.
3. Click **New**.

   Result: You see the New Field for Group - Quick View screen.
4. From the **Field Type** drop down list, select `Profile Tag Field`.
5. In the **Display Name** field type `Best Friend`.
6. From the **Profile Tag Name** drop down list, select the `Best Friend (LNSTRING)` profile tag you added in ACS. See Adding best friend profile tag.
7. In the Layout Details section, specify the Grid Position for the field. Set the:
   - **Column** to `0`
   - **Row** to the next available row number

- **Width** to 2
- **Height** to 1

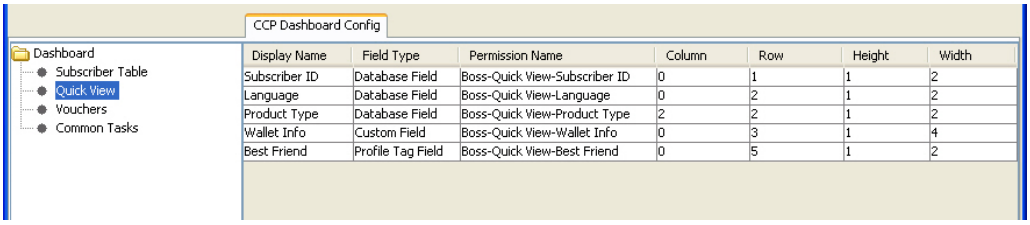
8. Click **Save**.

Adjusting quick view layout

This procedure assumes that the Quick View screen has been configured to include the following fields:

- Language
- Product Type
- Wallet Information Panel
- Best Friend

Here is an example screen showing how the fields have been configured.



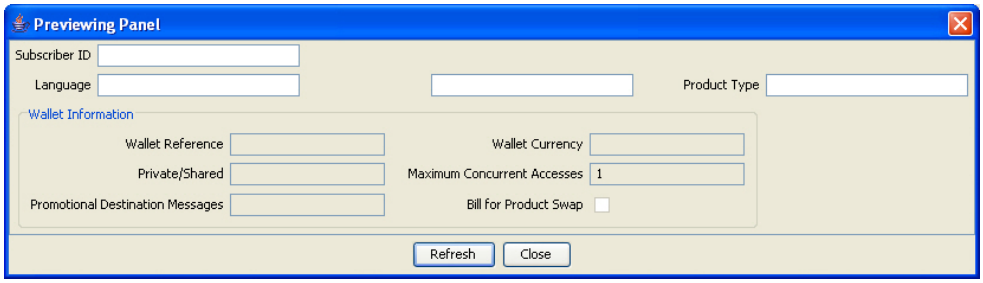
Follow these steps to adjust the Quick View screen layout to put the Best Friend and Product Type fields on the same row.

1. Select the Quick View option on the **CCP Dashboard Config** tab.
2. Click **Preview**.

   Result: You see the Previewing Panel screen for Quick View.
3. Leaving the Previewing Panel open, on the **CCP Dashboard Config** tab, select the Best Friend field in Quick View grid and click **Edit**.

   Result: You see the Editing Field from Group - Quick View screen.
4. Edit the Grid Position. Set the:
   - **Column** to 1
   - **Row** to 2.
5. Click **Save**.
6. In the Previewing Panel screen, click **Refresh**.

   Result: You see the updated Quick View layout.



Note: In this example, the Best Friend field is displayed without a label. This is because it needs 2 columns to display the label and the data entry box, and there is only 1 column available between the Language and Product Type fields.

7. To improve the screen layout, edit the Wallet Information Panel Grid Position as above. Set the:

   Width to 4.

8. Edit the Product Type field Grid Position as above. Set the:

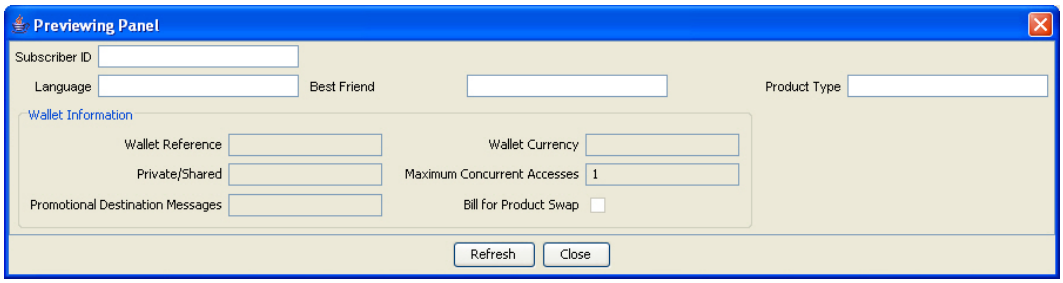
   Column to 4.

9. Edit the Best Friend field Grid Position as above. Set the:

   Column to 2.

10. In the Previewing Panel screen, click **Refresh**.

    Result: You see the updated Quick View layout.



Configuring subscriber details in SPM

Follow these steps to add the Best Friend profile tag field to a Subscriber Panel in the SPM.

1. In the Subscriber Profile Manager screen and select the Service Provider you want from the drop down list.
2. From the drop down list, select the **Product Type** for the Best Friend option.
3. From the left hand menu on the **Subscriber Config** tab, select the Subscriber Panels option where you want the Best Friend field to appear.

   Result: You see the list of fields included in the Subscriber Panels configuration for the selected option.

4. Click **New**.

   Result: You see the New Field for Group - *Subscriber_Panel* screen.

5. From the **Field Type** drop down list, select `Profile Tag Field`.
6. In the **Display Name** field type `Best Friend`.
7. From the **Profile Tag Name** drop down list, select the `Best Friend (LNSTRING)` profile tag you added in ACS. See Adding best friend profile tag.
8. In the Layout Details section, specify the Grid Position for the field. Set the:
   - **Column** to '0'
   - **Row** to the next available row number
   - **Width** to 2
   - **Height** to 1.

9. Click **Save**.
10. Preview the screen layout. Click **Preview**.

    Result: You see the Previewing Panel screen for the Subscriber Panel.

Product Type Limitations

You set the limitations for the Best Friend numbers by Product Type. For example, you can set the minimum length allowed for the Best Friend number.

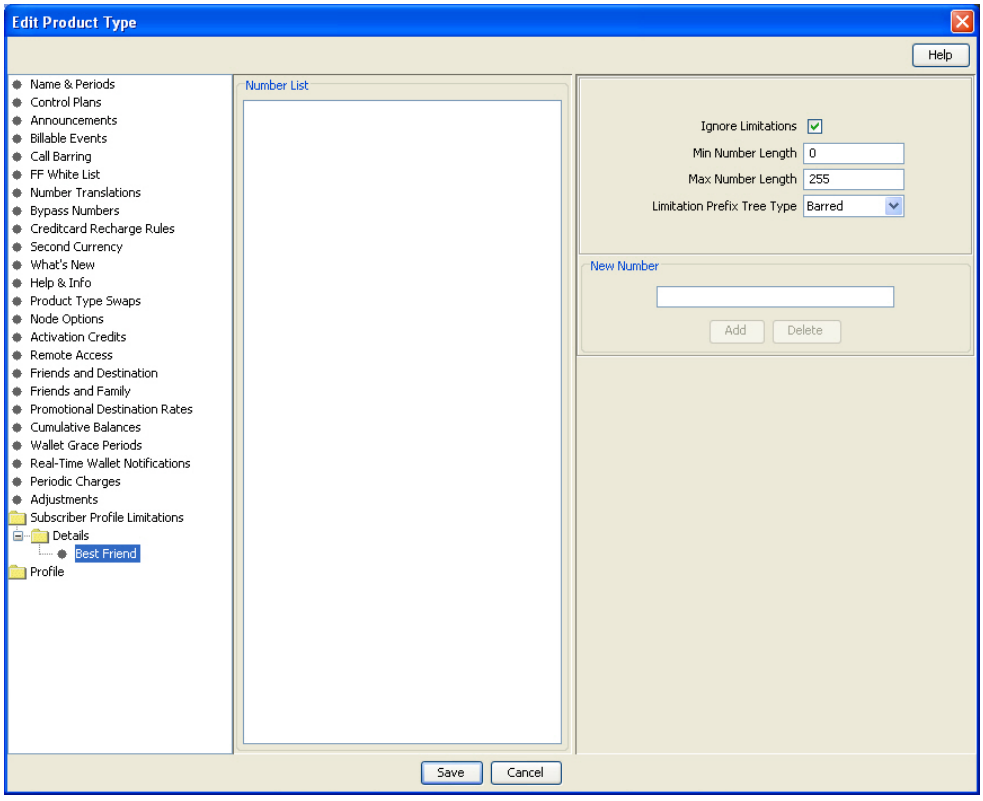
Configuring product type limitations

Follow these steps to configure the Product Type limitations for the Best Friend number.

1. Open the **Subscriber Management** screen.
2. From the **Service Provider** drop down list, select the Service Provider.
3. On the **Product Type** tab, select the Best Friend Product Type you added previously and click **Edit**.

    Result: You see the Edit Product Type screen.
4. From the left hand menu, open the Subscriber Profile Limitations group that includes the Best Friend option.
5. Select `Best Friend`.

    Result: You see the Best Friend configuration options in the Edit Product Type screen, such as in this example.



6. Specify Best Friend number limitations and click **Save**.

User Permissions

You must update the user templates defined in SMS to give CSR operators sufficient privileges to be able to edit Subscriber details and specify Best Friend numbers.

Defining user access

You must define access permissions on a Service Provider and Product type basis for the following:

- Any profile fields you have created
- All panels and screens that should be available from the CCP Dashboard
- Individual fields and groups of fields configured to be available in the CCP Dashboard, Edit Subscriber and Edit Product Type screens

Note: For information on how to set up user templates, refer to the *NCC SMS User's Guide*.

Control Plan Configuration

The Number Matching feature node must be included in the Subscriber's control plan to determine what action to take when the Subscriber calls their best friend. For example you can apply a discount to the call when the Best Friend number is called.

Configuring number matching

Follow these steps to configure the Number Matching node to handle calls to a Best Friend number.

1. Expand the Number menu in the Control Plan Editor screen.
2. Click and drag the Number Matching node on to the Control Plan Editor screen.
3. Open the Number Matching node.

   Result: You see the Configure Number Matching screen.
4. From the **Number Match Location** drop down list, select `Call Context`.
5. From the **Number Match Field** drop down list, select `CC Pending Termination Number`.
6. In the **Pattern List Location** panel, select the `Profile` option.
7. From the **Pattern List Location** drop down list, select `App Specific 1`.
8. From the **Patter List FIeld** drop down list, select the `Best Friend` tag created previously.
9. Click **Save**.

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Promotion Manager

This chapter explains the general features of the Oracle Communications Network Charging and Control Promotion Manager and how to configure Promotions.

This chapter contains the following topics.

Promotions

Promotion Manager Screen

Configuring Promotions

Details

Events

MSISDN Ranges

Segments

Rewards

Notification

Promotions

The Promotion Manager license allows the operator to:

- Define counters which track a subscriber's usage or expenditure within a configured promotion period
- Reward the subscriber based on their expenditure, either in real time or at the end of the period
- Reward the subscriber with bonuses when they recharge
- Reward the subscriber when they activate their wallet

Tracking counters

Each counter is linked to a service (such as voice calls or SMS) and a configured rating scenario consisting of the following:

- A corresponding balance type
- Period of promotion (daily, weekly, monthly or yearly)
- The amount of activity (cash, time or number of events) which will trigger the reward

When each service and rating scenario is defined, the counters which should be updated are chosen. This gives the operator full control over which services will be used as part of the promotion.

Promotion eligibility

All subscribers that share a wallet are considered eligible for a promotion, when any one of them triggers the promotion.

Eligible subscribers are given a Tariff or Credit reward.

- With a tariff reward, subscribers are automatically moved between product types depending on their level of expenditure. Thus, a subscriber with high spending can be rewarded by being moved to a different product type which may offer cheaper tariffs. Alternatively, a low spending subscriber could be penalized by being moved to a product type which has a more expensive rate plan.
- With a credit reward, a pre-configured credit amount may be awarded to the subscriber based his expenditure pattern. For example, if the subscriber spent 10 Euros last month on calling they might receive 5 Euros of national talk time credit to be used within a specific period.

Eligible subscribers are sent SMS or DAP notifications when the promotion is applied.

Promotion calculation

The promotion reward is calculated using one of two ways:

- At the end of the promotion period when the counter expires
- In real time, when the session during which the triggering event occurs

This allows the telco to target short term usage campaigns or plan longer term strategies in cases where the promotion was spread across a month or a year.

Note: The SMS screens allow configuring promotions that apply a percentage of the triggering balance type (for example, SMS) to a different balance (for example, Cash). However, in practice, promotions should be applied to the same balance type as the triggering balance.

If mismatched promotion balances are configured the conversion will be used as follows:

- Cash to Units as one currency minor unit (for example, cent) to one unit
- Cash to Time as one currency minor unit to 1/hundredth of a second

Processing logic

When the promotion is applied, the subscriber's MSISDN is checked against the list entries.

The following list processing logic is used.

1. If the MSISDN is not in the black list, the promotion is allowed.
2. If the MSISDN is in the black list, the promotion is not allowed.
3. If the MSISDN is in the exceptions list, promotion is allowed.

Promotion Manager Screen

Follow these steps to open the Promotion Manager screen.

1. Select the **Services** menu from the SMS main screen.
2. Select **Promotion Manager.**

   Result: You see the Promotion Manager screen.

Promotions tab columns

This table describes the content of each column in the **Promotions** tab on the Promotion Manager screen.

Column	Description
Promotion Name	Name of the Promotion.
Description	A short description of the promotion.
Active	Indicates if the promotion is currently active. Selecting the check box will change the Active or non-active status of a promotion. See Promotions buttons to apply changes.
Eligible	Indicates the current global limited liability status. See Details tab fields for more information.

Promotions buttons

This table describes the function of each button.

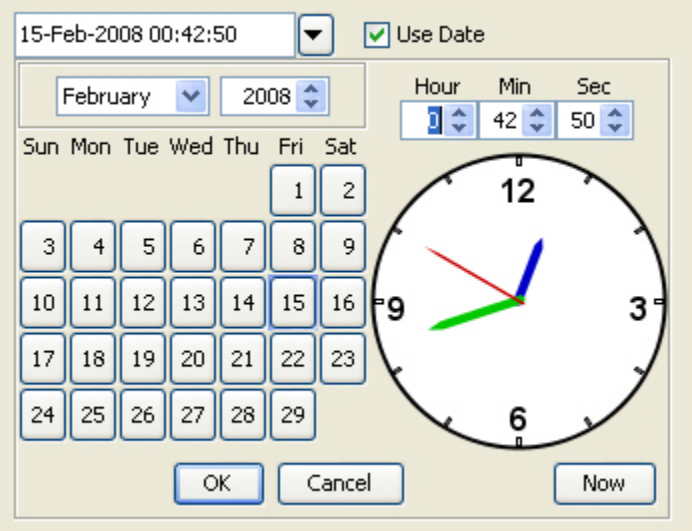
Button	Description
New	Opens the New Promotion screen used to add a new promotion.
Edit	Opens the Edit Promotion used to modify the selected promotion record.
Delete	Displays the Delete Confirmation prompt used to delete the selected promotion record.
Apply	Saves any changes made to the record on the current screen to the database. For example, changing the status of the **Active** check box will change the Active or non-active status of a promotion.
Close	Closes the current screen and returns you to the previous screen in the screen hierarchy. **Note:** Any changes that have been made on-screen will not be saved (unless **Apply** has been clicked previously).

Time and Date panels

Follow these steps to set a time and date field using a time and date panel.

1. At the end of the time and date field you want to define, click the **down arrow**.

   Result: The time and date panel appears.



2. To quickly set the date to today and the time to the current time, click **Now**.

   Otherwise, set the date and time as described in steps 3-5.

3. Set the month and year for the date using the month and year selection boxes.
4. Click on the number for the day of the month.
5. Set the time using the **Hour**, **Min** and **Sec** selection boxes.

   Tip: To set the time using the clock face, click and drag the clock hands to the required time.

6. Click **OK**.

Configuring Promotions

Promotion options

Here is the list of Promotion options that must be set up for configuring a promotion. They are available using the New Promotion and the Edit Promotion screens.

- Details
- Events
- MSISDN Ranges
- Segments
- Rewards
- Notification

Adding a new promotion

Follow these steps to add a new promotion.

1. In the Promotion Manager screen, select the service provider from the drop down box.

   Result: The table below displays the promotions currently defined for this service provider.

2. Click **New**.

   Result: You see the New Promotion screen, with the **Details** tab selected.

3. Fill in the fields, as described in the Details tab fields.

4. Configure the other tabs in the following order:

   - Segments
   - Rewards
   - Notification

5. Click **Save**.

   Note: After saving a promotion, you can configure MSISDN black lists and exceptions lists for the promotion. See Configuring MSISDN ranges black lists and exceptions lists

Related topic

Configuring Promotions

Editing a promotion

Follow these steps to edit an existing promotion.

1. In the Promotion Manager screen, select the service provider from the drop down box.

   Result: The table below displays the promotions currently defined for this service provider.

2. Select the promotion to edit in the grid, and click **Edit**.

   Result: You see the Edit Promotion screen, with the **Details** tab selected.

3. Edit the fields to reflect the changes you need to make.

   For more information about the fields on this screen, see Details tab fields.

4. Edit fields on the other tabs, if needed:

   - Events
   - MSISDN Ranges
   - Segments
   - Rewards
   - Notification

5. Click **Save**.

Related topic

Configuring Promotions

Deleting a promotion

Follow these steps to delete a record from the Promotion Manager screen.

1. In the Promotion Manager screen, select the service provider from the drop down box.

   Result: The table below displays the promotions currently defined for this service provider.

2. Select the promotion to delete in the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK**.

   Result: The field is removed from the table.

Related topic

Configuring Promotions

Configuring legacy expiry rewards

Follow these steps to configure the equivalent of a legacy expiry reward that could previously be set up on the CCS Wallet Management screen, **Rewards** tab.

1. Select the following values on the **Events** tab:
   - Promotion Type: **Tracker Promotion**
   - Event Category: `Tracker Expiry`
   - Balance Type: an expenditure balance type, such as `Monthly Exp`
   - Balance Condition: **Balance Value** is `In Range` with the required values configured
2. Select the following values on the **Segments** tab:
   - Segment Group: `All Of`
   - Segment Fragment: `Product Type: In Set` and the required product type configured
3. On the **Rewards** tab:
   - Configure the required **Reward Product Type**
   - Select the Balance Type for the Multi-Balance record as `General Cash`
4. On the **Notification** tab:
   - Configure the required Announcement Set / Entry
   - Configure the required Pre-promotion notifications

Configuring legacy real-time rewards

Select the following values to configure the equivalent of a legacy Real-Time Reward that could previously be set up on the CCS Wallet Management screen, **Rewards** tab.

Select the following values on the **Events** tab:

- Promotion Type: **Tracker Promotion**
- Event Category: `Tracker Threshold`.
- Balance Type: an expenditure balance type, such as `Monthly Exp`

- Balance Condition: **Balance Value** is `Threshold` with the required values configured

Configuring legacy activation credits

Follow these steps to configure the equivalent of a legacy Activation Credits that could previously be set up on the CCS Subscriber Management screen, **Product Type** tab.

1. Select the following values on the **Details** tab:
   - Configure the required promotion start date and/or end date
2. Select the following values on the **Events** tab:
   - Promotion Type: **Flash Promotion**
   - Event Category: `Wallet Activation`
3. Select the following values on the **Segments** tab:
   - Segment Group: `All Of`
   - Segment Fragment: `Product Type: In Set` and the required product type configured.
4. Select the following values on the **Rewards** tab:
   - Configure the Multi-Balance records with the required Credit Amounts and Expiry Dates/Offsets.

Configuring legacy recharge bonus

Follow these steps to configure the equivalent of a legacy Recharge Bonus that could previously be set up on the CCS Wallet Management screen, **Bonus Values** and **Bonus Types** tabs.

1. Select the following values on the **Events** tab:
   - Promotion Type: **Flash Promotion**
   - Event Category: `Balance Recharge`
   - Balance Type: a chargeable balance type, such as `General Cash`.
   - Channel: `Any`, or `ATM`, or `Other` (as required).
   - Reference: the component/reference as configured in the invoking system.
   - Balance Condition: **Delta Value** is `In Range` with the required values configured.
2. On the **Rewards** tab, configure the required Multi-Balance records with one of the following:
   - a *Promotional* Balance Type (as required) and a **Credit Amount** and Expiry Offset (as previously configured in the Voucher Type screen)
   - a *Promotional* Balance Type (as required) and a Credit Percentage with the required **Credit Percentage** value as **Of Delta** percentage type and a Balance Expiry Policy of **Do Not Modify**.

Note: As with the legacy Bonus Values, the entries in a Bonus Set must cover the full range of values from 0 to the highest End value. If there is a gap in the covered values, the Bonus Set will fail, that is, if a contiguous range is not configured, a recharge may slip through the configured range.

For Example: To create a Bonus Value which applies a 5% discount to all Voucher recharges of more than $20, you must also configure a Bonus Value which applies a 0% discount to recharges of $0 to $19.

Configuring Manual Limited Liability

You can define a “manually limited liability” promotion, where the limit is enforced by the presence of a separate unit balance in the subscriber’s wallet. As it is a manually managed limit, there is no automatic renewal of the limit, nor is there any global maximum specified for the limit.

A non-recurring limited promotion eligibility may be used to span multiple promotion definitions. Existing limited liability bonuses may be migrated into the Promotion Manager framework.

Here is the process for manual limited liability promotions:

1. Operator defines a limited liability balance type for eligibility to a promotion.
2. Operator can associate a limited liability balance type with multiple promotions.
3. Subscriber becomes eligible for 1 or more promotions and limited liability balance type.
4. Promotion applied and the balance type is decremented.
5. Promotion will only be applied if the balance type value is greater than 0.

Once the liability limit balance has been consumed or the expiration date has passed, the promotion eligibility will expire and not be reinstated automatically.

The balance type may be associated with a wallet through a recharge definition, BPL etc, but shall not be automatically regenerated.

The liability balance will continue to be decremented until all promotion definitions are satisfied or the balance reaches 0.

Details

The **Details** tab allows you to temporarily activate or deactivate a promotion. In addition, you can define the following configuration for a promotion:

- A start and end date can be defined for all types of promotions
- Individual limited liability values for a reward
- Global limited liability values for a reward

Details tab fields

This table describes the function of each field.

Field	Description
Name	A unique name for the promotion. This field is mandatory.
Description	A short description for the new promotion.

Field	Description
Activate Promotion	Select this check box to allow a promotion to be activated. **Note:** Any new promotions created are by default in the inactive state and must be activated to take effect. This may be overridden on a per promotion basis, if required.
Individual Limited Liability	The number of times a reward can be applied to an individual wallet. This field is optional.
Reset Individual Liability	How often the individual liability limit is reset. Select one of: • Never • Every Day • Every Week • Every Month • Every Year This field is optional.
Manual Limited Liability	Select a Manual Limited Liability balance type. The list is configured on the Wallet Management, **Balance Types** tab. **Note:** This field is available only if permission is set in a template on the SMS **Template Creation** tab. Refer to *SMS User's Guide*.
Global Limited Liability	The number of times a reward can be applied across all subscribers for the current service provider. This field is optional.
Reset Global Liability	How often the global liability limit is reset. Select one of: • Never • Every Day • Every Week • Every Month • Every Year This field is optional.
Current Global Limit	Displays the current global limited liability **Status**, **Value** and **Expiry** on the Edit Promotion screen. The possible values for Status are defined as: • Unset: Zero limit configured • Eligible: Configured limit above current value • Not Eligible: Configured limit equal to or below current value
Applicable Dates	The **Start** and **End** dates and time for the promotion to apply. This is an optional field. **Note:** The promotion will be applied only if the current date is within the defined Start and End date and time.

Adding details

Follow these steps to configure basic Details for a new promotion.

1. Follow the steps listed in Adding a new promotion to display the New Promotion screen.

   Result: You see the New Promotion screen, with the **Details** tab selected.

2. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Details tab fields.

3. Go to Events tab to continue configuring the new Promotion.

Related topic

Details

Editing details

Follow these steps to edit the Details information of an existing promotion.

1. Follow the steps listed in Editing a promotion to display the Edit Promotion screen.
2. Select the **Details** tab.

   Result: You see the Details information configured for the selected promotion.

3. Edit the fields with the required changes.

   For more information about the fields on this screen, see Details tab fields.

4. Click **Save**.

Related topic

Details

Events

The **Events** tab allows you to configure details for the event that triggers the promotion. Different event categories are available for Flash and Tracker Promotions.

Flash promotion

This type of promotion is applied when a selected triggering event occurs.

The following events can trigger flash promotions:

Events	Promotion triggered when a...
Balance Charge	Specific balance value changes on a prepaid or post-paid wallet and when the balance conditions (if any) have been met
Balance Recharge	Specific balance value changes on a prepaid wallet, that is, when the balance is recharged, and when the balance conditions (if any) have been met

Events	Promotion triggered when a...
Balance Expiry	Specific balance expires and when the conditions (if any) have been met
Wallet Activation	Subscriber's wallet changes state from `Pre-Use` to `Active`
Wallet Expiry	Subscriber's wallet changes from any state to `Terminated`

Tracker promotion

This promotion is triggered when the configured tracker event occurs. The following events can trigger tracker promotions:

- Tracker Thresholds: promotion applies when threshold on selected balance type is reached.
- Tracker Expiry: promotion applied when tracker balance expires.

A tracker can be associated to a promotion. For more information on how operators can use trackers during promotions, see Promotions.

Event conditions

The following configured event condition elements are all evaluated together; a promotion is only triggered if all event condition elements are satisfied:

- Bearer
- Channel
- Reference
- Balance Conditions

When an event condition is configured, the above fields are combined to create an event condition and the promotion is only triggered if the incoming event matches all of the above parts.

For Example: The following elements form a single event condition of all elements must match for the promotion to apply:

bal value: 10, type: value, operator: >, bearer: voice, channel: ATM, reference REF1

A promotion can have multiple even conditions associated with it. However, each separate event condition for a promotion is considered separately when the promotion is triggered. The promotion is applied if at least one of the configured event conditions matches.

For Example: The following are separate event conditions, and any one may match for the promotion to apply:

bal value: 10, type: value, operator: >, bearer: voice, channel: ATM, reference REF1

bal value: 10, type: value, operator: >, bearer: SMS, channel: ATM, reference REF1

bal value: 10, type: value, operator: >, bearer: voice, channel: ATM, reference REF2

Events tab fields

This table describes the function of each field.

Field	Description
Promotion Type	Indicates if the promotion is triggered by balance and wallet events, or tracker events. Select one of the following: • Flash Promotion • Tracker Promotion This field is mandatory.
Event Category	The event that will trigger the promotion. This field is mandatory. **Note:** Event category options are based on the Promotion Type selected.
Reset Tracker Balance to Zero	Select this check box to control whether the balance type of the expenditure tracker is reset to zero when the promotion is applied (after the segment has been evaluated and before the reward has been applied). **Note:** This is an optional field, available for a Tracker Promotion where the Event Category selected is `Tracker Threshold`. The tracker balance is reset automatically when it expires.
Balance Type	The Balance Type to which the promotion applies. **Note:** Balance Type options are based on the Promotion Type and Event Category selected. For Tracker Promotions, only Expenditure Balances can be selected. For Flash Promotions, only Chargeable Balances can be selected.
Bearer	The bearer for the Balance Recharge event. This indicates the type of service used for performing the recharge. **Note:** This is an optional field, available only for a Flash Promotion where Event Category selected is B`alance Recharge`.
Channel	The channel for the Balance Recharge event. This indicates the mechanism used for performing the recharge. **Note:** This is an optional field, available only for a Flash Promotion where Balance Type selected is `Balance Recharge`.

Field	Description
Reference	The reference text that may be provided by the caller of the web service. You can optionally use the specified reference to restrict the promotion for eligibility. Promotions will only be applied if the channel and reference, along with any other filter criteria, are satisfied. You can include the * and ? wild card characters for regular expressions in the **Reference** field to apply rewards to subscribers based on the matching reference prefix. For example, if you specify **MPOS_V*?** in the **Reference** field, then rewards sent with the reference `MPOS_V1`, or `MPOS_V2` are applied. **Note:** This field is not available if the Channel selected is `Voucher`.
Balance Condition	This is a combination of fields used to narrow down events by changes to balance or delta values, for example. The promotion will only apply to events that satisfy the specified balance or delta conditions. • Balance Value: Indicates the current balance value after applying the event. • Delta Value: Indicates the value by which event will have changed the current balance. **Note:** This field is optional. It is available for Balance Charge, Balance Recharge and Tracker Threshold events.
Voucher Condition	Select the voucher type from the drop down list. **Note:** This field is only visible if the Channel selected is `Voucher`.

Note: To understand how event conditions work, see Event conditions.

Adding events

Follow these steps to configure Events details for a new promotion.

1. Follow the steps listed in Adding a new promotion to display the New Promotion screen.
2. On the New Promotion screen, select the **Events** tab.

   Result: You see the Event configuration options.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Events tab fields.
4. Click **Add**, or **Edit**, or **Delete** to apply the configured event to the promotion.
5. Go to **MSISDN Ranges** tab to continue configuring the new Promotion.

Related topic

Events

Editing events

Follow these steps to edit the Events information of an existing promotion.

1. Follow the steps listed in Editing a promotion to display the Edit Promotion screen.
2. On the Edit Promotion screen, select the **Events** tab.

   Result: You see the Events details configured for the selected promotion.
3. Edit the fields with the required changes.

   For more information about the fields on this screen, see Events tab fields.
4. Click **Add** to apply the configured changes to the promotion.
5. Click **Save**.

Related topic

Events

MSISDN Ranges

The **MSISDN Ranges** tab allows you to control subscriber eligibility for a promotion:

- The black list specifies the MSISDNs that are not allowed to receive the promotion.
- The exceptions list specifies the MSISDNs in the black list that are allowed to receive the promotion.

Each promotion may have a set of black and exceptions list entries and each black or exceptions list entry relates to a single MSISDN or a range of MSISDNs.

You can search for a range of MSISDNs that you can then add to, or remove from, a black list or an exceptions list. See Searching for MSISDNs and MSISDN Range for more information.

Note: Black lists and exceptions lists can be imported and exported from the command line. See *CCS Technical Guide* for more information.

Processing logic

When the promotion is applied, the subscriber's MSISDN is checked against the list entries.

The following list processing logic is used.

1. If the MSISDN is not in the black list, the promotion is allowed.
2. If the MSISDN is in the black list, the promotion is not allowed.
3. If the MSISDN is in the exceptions list, promotion is allowed.

MSISDN Ranges fields

The following table describes the function of each field or button.

Field or Button	Description
Start MSISDN	Enter a single MSISDN or enter the start number of a range of MSISDNs to add, remove, or search for in either list.
End MSISDN	Enter the end number of a range of MSISDNs to add, remove, or search for in either list.
Search Black List	Displays the search result dialog box of the black lists for the single MSISDN or MSISDN range.
Search Exceptions List	Displays the search result dialog box of the exceptions list for the single MSISDN or MSISDN range.
Import to Black List	Displays the **Import to Black List** dialog box that allows you to select the storage directory file and configuration file to import that contains the stored list of MSISDNs. **Note:** Importing a black list will overwrite the existing black list for the promotion in the database.
Import to Exceptions List	Displays the **Import Exceptions List** dialog box that allows you to select the storage directory file and configuration file to import that contains the stored list of MSISDNs. **Note:** Importing an exceptions list will overwrite the existing exceptions list for the promotion in the database.
Add to Black List	Displays the **Add To Black List** dialog box for adding the MSISDNs to the black list.
Add to Exceptions List	Displays the **Add To Exceptions List** dialog box for adding the MSISDNs to the exceptions list.
Remove from Black List	Deletes the selected MSISDNs from the black list.
Remove from Exceptions List	Deletes the selected MSISDNs from the exceptions list.
Export from Black List	Displays the **Export Black List** dialog box to export a black list configuration to an external text file. **Note:** You will be prompted to enter a file name and location on any local or mapped drive on the machine to save the current black list.
Export from Exceptions List	Displays the **Export Exceptions** dialog box to export an exceptions list configuration to an external text file. **Note:** You will be prompted to enter a file name and location on any local or mapped drive on the machine to save the current black list exceptions.

Searching for MSISDNs or an MSISDN Range

You can search for an MSISDN or a range of MSISDNs in either the black list or the exceptions list. If no results are returned, you can add the specified MSISDN or range of MSISDNs to the list. If the search finds the MSISDNs, you can remove them from the lists.

Follow these steps to search for MSISDNs or a range of MSISDNs.

1. Follow the steps listed in Editing a promotion to display the **Edit Promotion** screen.
2. On the **Edit Promotion** screen, select the **MSISDN Ranges** tab.
3. In the **Start MSISDN** field, enter the subscriber's MSISDN data to search for a particular MSISDN. For a range of MSISDNs, enter the data in the **Start MSISDN** and **End MSISDN** fields.
4. Click **Search Black List** or **Search Exceptions List**.

   Result: The search result dialog box appears for the MSISDN or the MSISDN range. The status field displays whether the MSISDNs are already defined in the list, and their status. You can perform the following based on the search result:

   - If the MSISDN or a range of MSISDNs is undefined, click **Add to List** to add the MSISDNs to the black list or exceptions list.
   - If the MSISDN or a range of MSISDNs is defined, click **Remove from List** to remove the MSISDNs from the black list or exceptions list.
   - If the range of MSISDNs are defined, click **Remove whole range from list** to remove the range of MSISDN from the black list or exceptions list.
   - Click **Cancel** to close the search results dialog box without updating the list.

Configuring MSISDN ranges black lists and exceptions lists

Follow these steps to configure MSISDN ranges black lists and exceptions lists for an existing promotion.

1. Follow the steps listed in Editing a promotion to display the Edit Promotion screen.
2. On the Edit Promotion screen, select the **MSISDN Ranges** tab.

   Result: You see the MSISDN range configuration options.
3. Enter data in the fields to configure this record.

   For information about the fields on this screen, see MSISDN Ranges fields.
4. Click **Save**.

Related topic

MSISDN Ranges

Segments

The **Segment** tab is used to graphically configure complex conditions and segment equations for a promotion. This segmentation is displayed in the form of a tree structure, called Promotion Expression.

The tab is divided into two main areas:

- Toolbar containing Node icons
- Control area for configuring the Promotion expression

The segment expression is made up of promotion segments or fragments and logic groupings which are represented in the toolbar as icons. You can select these icons and place them into the control area as nodes to create a tree hierarchy that forms a

complex Promotion Expression. Multiple segment fragments can be configured and a combination of logic groupings can be used to build sub-expressions.

Promotion segmentation

Each of the following promotion segments or segment fragments must be set up as nodes on the Promotion Expression tree before they can be configured:

- Product Type
- Wallet State
- Wallet Date (Activation, Expiry)
- Balance Value
- SPM Field

Notes:

- To set up the nodes and configure the Promotion Expression tree, see Adding segments.
- To configure the promotion segments, see Segment fragments.

Logical groupings

The following logical groupings are available to build the Promotion Expression tree.

- All Of (AND)
- Any Of (OR)
- Only One Of (XOR)
- None Of (NOR)

Segment button toolbar

The following table describes the functions of the toolbar buttons on the **Segments** tab.

Button	Function
Clear Pointer	Use to de-select the current icon selected and return the mouse cursor to a normal pointer.
Product Type	Represents the Product Type node which configures a set of product types eligible for the promotion.
Wallet State	Represents the Wallet State node that allows specific wallet states to be selected for the promotion.
Wallet Date	Represents the Wallet Date node that configures wallet activation or expiry dates for the promotion.
Balance Value	Represents the Balance Value node that allows a specific balance type to be selected for the promotion.
SPM Field	Represents the SPM Field node that allows any existing Profile Details (Profile Tag) entry to be configured for the promotion.

Button	Function
All Of	Logical grouping node indicating that all grouped entries must be true for the promotion to apply.
Any Of	Logical grouping node indicating that the promotion will apply if any of the grouped entries is true.
Only One Of	Logical grouping node indicating that the promotion will apply if only one of the grouped entries is true.
All Of	Logical grouping node indicating that all grouped entries must be false for the promotion to apply.
Move Selected Node Up	Use to move a selected node up in the segment hierarchy.
Move Selected Node Down	Use to move a selected node down in the segment hierarchy.
Delete Selected Node	Use to remove a selected node from the segment tree.

Adding segments

Adding segments to build a Promotion Expression is a three-stage process:

1. Build the segment conditions, that is, the Logical groupings
2. Add segment fragments, that is, the Promotion segmentation
3. Configure the Segment fragments

Follow these steps to build a new Promotion Expression tree.

1. On the New Promotion screen, select the **Segments** tab.

   Result: The configuration options for segments display on the toolbar.
2. To build the Promotion Expression tree, select a logical grouping node on the toolbar.

   Result: The mouse cursor takes on the shape of the selected node.
3. Move the icon under the Promotion Expression text and click to anchor it within the control area.

   Result: The logical grouping node representing the promotion condition is now available for use.
4. To build the segment fragment, select a promotion segment node on the toolbar.

   Result: The mouse cursor takes on the shape of the selected node.
5. Move the icon under the logical grouping node and click to anchor it within the Expression tree.

   Result: The segment fragment node is now available for configuration.

   Note: To configure the selected segment fragment node, see Segment fragments.
6. Repeat steps 2-6 to add multiple segment fragments or to create sub-expressions.

   Tip: You can change the position of the nodes in the segment hierarchy or delete them using the toolbar buttons.

7. Go to Rewards tab to continue configuring the new promotion.

Related topic

Segments

Editing segments

Follow these steps to edit the Promotion Expression tree of an existing promotion.

1. Follow the steps listed in Editing a promotion to display the **Edit** Promotion screen.
2. On the Edit Promotion screen, select the **Segments** tab.

   Result: You see the Expression tree configured for the selected promotion.
3. Edit the nodes with the required changes.

   To edit the Expression tree, use the buttons on the segment toolbar.

   To configure the segment fragments, see Segment fragments.
4. Click **Save**.

Related topic

Segments

Segment fragments

This topic explains how to configure the individual segment fragment. For a complete list of available segment fragments, see Promotion segmentation.

Configuring segment product type

The Product Type fragment allows a set of product types to be selected from all of the existing product types for the current service provider.

Follow these steps to configure a Product Type fragment.

1. Go to the **Segments** tab on the New Promotion or Edit Promotion screen.
2. Select the Product Type node placed within the control area and double-click the icon. If the node is not already available in the control area, select it from the Segments toolbar.

   Result: You see the Segment Fragment - Product Type screen.
3. Select one of:
   - **In Set** - subscriber will receive the promotion if using one of the selected product types
   - **Not In Set** - subscriber will receive the promotion if not using any of the selected product types
4. From the **Available List**, select the product type to associate with the promotion, either as In the Set or Not In the Set of defined product types.
5. Click the **>** button.

   Result: The selected product type will be moved to the **Selected List**.

   Note: To move all entries listed in Available list to Selected list, click the **>>** button.
6. To remove a product type from the Selected List, select the entry and click the **<** button.

Note: To remove all entries listed in Selected list, click the **<<** button.

7. Click **Save**.

   Note: A maximum of two product type fragments may be configured per promotion.

Related topic

Segment fragments

Configuring segment wallet date

The Wallet Date fragment allows a specific wallet date to be selected.

Follow these steps to configure a Wallet Date fragment.

1. Go to the **Segments** tab on the New Promotion or Edit Promotion screen.
2. Select the Wallet Date node placed within the control area and double-click the icon. If the node is not already available in the control area, select it from the Segments toolbar.

   Result: You see the Segment Fragment - Wallet Date screen.
3. Select the **Date Type** that will be evaluated for the promotion. Choose one of either:
   - Wallet Activation
   - Wallet Expiry
4. Select a **Comparison** operator from the drop-down list.
5. You can configure a Fixed Date or an Offset period to which the wallet date type is compared. To configure:
   - Fixed date, select the **Fixed Date** option and select a time and date to associate with the promotion. For more information about setting dates, see Time and Date panels.
   - Offset period, select the **Offset** option and specify the number of hours, days or months by which the wallet date type should be extended from the current system date for comparison.
6. Tick the **Negative Offset** check box to compare the wallet date against a date in the past.

   Note: This option is only available when configuring an Offset period for the wallet date type.
7. Select a Missing Wallet Date Policy which will apply if the wallet does not have a date of the specified type.
   - **Success** - the fragment will be treated as a successful evaluation, in case a suitable wallet date is missing.
   - **Failure** - the fragment will be treated as a failed evaluation, in case a suitable wallet date is missing.
8. Click **Save**.

Note: A maximum of two wallet date fragments may be configured per promotion.

Related topic

Segment fragments

Configuring segment wallet state

The Wallet State fragment allows a specific wallet state/s to be selected for the promotion. The wallet state is evaluated before the triggering flash action is applied.

Follow these steps to configure a Wallet State fragment.

1. Go to the **Segments** tab on the New Promotion or Edit Promotion screen.
2. Select the Wallet State node placed within the control area and double-click the icon. If the node is not already available in the control area, select it from the Segments toolbar.

   Result: You see the Segment Fragment - Wallet State screen.
3. Select a **Comparison** operator from the drop-down list.
4. Select the wallet state you want to include in the promotion.

   Example: The promotion will only apply if: `Wallet State = Active`.
5. Click **Save**.

   Note: A maximum of six wallet state fragments may be configured per promotion.

Related topic

Segment fragments

Configuring segment balance value

The Balance Value fragment allows a specific balance type to be selected for the promotion.

Follow these steps to configure a Balance Value fragment.

1. Go to the **Segments** tab on the New Promotion or Edit Promotion screen.
2. Select the Balance Value node placed within the control area and double-click the icon. If the node is not already available in the control area, select it from the Segments toolbar.

   Result: You see the Segment Fragment - Balance Value screen.
3. Select a **Balance Type** to include in the promotion.

   Notes:

   - The balance type drop-down list displays balance values from any existing balance type (irrespective of the balance category) for the current service provider.
   - The current balance value of the selected balance type is compared to the fixed value configured, after applying any recharge value that triggered the promotion.
4. Select a **Comparison** operator from the drop-down list.
5. In the **Compare To** field, specify a fixed balance value to which the eligible balance value will be compared.
6. Select a Missing Balance Policy which will apply if the wallet does not have a balance of the specified type.

   - **Success** - the fragment will be treated as a successful evaluation, in case a suitable wallet balance is missing.
   - **Failure** - the fragment will be treated as a failed evaluation, in case a suitable wallet balance is missing.

7. Click **Save**.

   Note: A maximum of ten balance value fragments may be configured per promotion.

Related topic

Segment fragments

Configuring segment SPM field

The SPM Field fragment allows an entry, consisting of existing Profile details mainly sourced from a Profile Tag, to be selected for the promotion.

Follow these steps to configure a SPM Field fragment.

1. Go to the **Segments** tab on the New Promotion or Edit Promotion screen.
2. Select the SPM Field node placed within the control area and double-click the icon. If the node is not already available in the control area, select it from the Segments toolbar.

   Result: You see the Segment Fragment - SPM Field screen.
3. In the **Source** field, select the profile block that contains the required profile tag.

   The Source Profile Block can be selected from the following values:

   - Subscriber
   - Product Type
   - Service Provider
4. In the **SPM Field**, select the relevant profile tag which contains the profile value to be compared.
5. Select a **Comparison** operator from the drop-down list.
6. In the **Compare To** field, specify a fixed profile value to which the eligible SPM Field will be compared.

   Notes:

   - The format of this field will change depending on the tag type of the SPM field value. For example, If the tag type for the SPM Field value is `Date`, an option will be provided to specify if the profile tag date is compared to a **Fixed Date** or an **Offset** period from the current date.
   - When configuring an offset period, the **Negative Offset** check box is available so the profile date can be compared against a date in the past.
   - If the tag type is `Prefix Tree` either the contents or size may be evaluated.
   - Additional allowed profile tag types are: String, Integer, Numeric String.
7. Select a Missing SPM Field Policy which will apply if the source profile does not contain a profile entry with the specified tag.

   - **Success** - the fragment will be treated as a successful evaluation, in case a suitable profile tag is missing.
   - **Failure** - the fragment will be treated as a failed evaluation, in case a suitable profile tag is missing.
8. Click **Save**.

Note: A maximum of five SPM Field fragments may be configured per promotion.

Related topic

Segment fragments

Rewards

The **Rewards** tab allows you to assign rewards to a promotion that is triggered by the specific event configured on the Events tab.

Rewards may be associated with a promotion as a set of multi-balance definitions that provide a fixed reward amount, or a bonus percentage of the incoming recharge event that is assigned to an expenditure, or chargeable balance. Optionally, a reward product type can be configured whereby the subscriber's product type will be swapped to the selected product type when the promotion is applied.

If a wallet has a defined expiration date, you may define an extension to the existing expiration date for the promotion. This will extend the existing promotion definition functionality allowing you to provide extensions to the wallet for required business scenarios, such as a free annual extension of the wallet subscription if the customer utilizes their account sufficiently enough.

The wallet is checked for promotional eligibility, that is, balance type defined. If eligible, the promotion is applied to the wallet and if an extension is defined, and the wallet has an expiration date set, the wallet's expiration date is extended according to the definition and policies defined. However, if a wallet is defined as never expires, the promotion does set an expiration date and the extension within the promotion definition is ignored.

Note: Modifying the promotion event category affects the multi-balance reward definitions, a warning message is displayed to the user when this occurs. When the user saves the promotion record, automatic changes are made to some multi-balance definitions where possible. The multi-balance definitions that cannot be fixed automatically will be marked as invalid and the save will fail.

Rewards fields

This table describes the function of the fields available on the tab.

Field	Description
Reward Product Type	The product type to which the subscriber's current product type will be changed when the promotion is applied. This is an optional field. If `NO PRODUCT` is selected, no swap will be performed.
Wallet Expiry Period	The period (in days and hours, or months, depending upon the `Expiry Period Type`) between the wallet being activated and when it will expire.
Expiry Period Type	The unit the Wallet Expiry Period is calculated in. Select either: • Hours - the Wallet Expiry is calculated in days and hours • Months - the Wallet Expiry is calculated in months

Field	Description
Wallet Expiry Policy	Which date to calculate the Wallet Expiry Period from. Select either: • Best - extends expiry from the date the voucher is redeemed (this will only apply if there is a positive effect). • Extend - extends expiry from the current expiry date.

Adding rewards

Follow these steps to configure rewards details for a new promotion.

1. Follow the steps listed in Adding a new promotion to display the New Promotion screen.
2. On the New Promotion screen, select the **Rewards** tab.

   Result: You see the Rewards configuration options.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Rewards fields.

   To add multiple balances to the reward, see Adding multi-balance reward.
4. Go to Notification tab to finish configuring the new promotion.

Related topic

Rewards

Editing rewards

Follow these steps to edit the rewards details of an existing promotion.

1. Follow the steps listed in Editing a promotion to display the Edit Promotion screen.
2. On the Edit Promotion screen, select the **Rewards** tab.

   Result: You see the Rewards information for the selected promotion.
3. Edit the fields with the required changes.

   For more information about the fields on this screen, see Rewards fields.

   To edit multiple balances to the reward, see Editing multi-balance reward.
4. Click **Save**.

Related topic

Rewards

Multiple balance type

You can add more than one balance type to a reward type. When a reward is triggered, all balance types associated with the reward type are recharged. This can

include both monetary balance types (such as general cash or promotional cash) and non-monetary balance types (such as free SMS or time).

More than one entry can be added for the same balance type, with different details for each entry, including:

- Balance values and balance policies
- Unique expiry dates and extension policies
- Balance availability dates that will be applied when the selected balance type entry is recharged

Multi-balance reward fields

This table describes the function of each field.

Field	Description
Action	Provides three actions: • **Recharge**: the recharge value will be added to the current balance value • **Replace Balance**: the recharge value will replace the current balance value • **Reload Counter**: the balance value is a counter for the number of reloads of the selected balance type
New Bucket	Whether to create a new bucket for the balance type when the voucher is redeemed.
Balance Type	The balance type to recharge when vouchers of this type are redeemed. This field is populated by the records on the Balance Types tab. **Note:** Any valid balance type can be selected. This includes non cash balance types, such as time.
Credit Amount	A fixed amount for the Multi-Balance Reward value.
Credit Percentage	The Multi-Balance Reward value expressed as a percentage. The Percentage is calculated as: • **Of Delta** – The delta value of the Balance Charge, Recharge or Tracker Threshold event. • **Of Balance** – The whole of the current balance value. • **Of Delta Above Threshold** – This is calculated as: Delta above threshold = Value at Expiry - Threshold Amount **Note:** The Credit Percentage option is only enabled when the promotion event is one of: • Balance Charge • Balance Recharge • Tracker Threshold • Tracker Expiry

Field	Description
Credit Available	Select one of the following: • **Now** - Credit is available immediately • **In** - Activates **Dates/Hours** and **Months**, from which you can set when credit becomes available in specified number of days and hours, or months • **On** - Activates the date selector, from which you can set the exact date when credit becomes available **Note:** You can only specify **Credit Available** for chargeable or cross balance types.
Balance Expiry Date	Option to configure a fixed date when the balance will expire using the Time and Date panels.
Balance Expiry Policy	How to apply the expiry period for this balance type when vouchers of this type are redeemed. Select: • **Best** - The system will select the best policy option for the subscriber depending on their particular circumstances. • **Extend** - The current expiry period is extended by the specified days and hours. • **Ignore** - No change is made to the current expiry period. • **Extend From Today** - The current expiry period to be extended the specified number of days and hours from today's date. The following fields exist when the `jnlp.ECEExtensions` application property is true. Select: • **First Use with Offset** - The expiry is set a number of months or hours after the first use of the balance • **First Use** - Account Cycle - The expiry is set to the date of the first use of the balance, plus a number of account cycles • **First Use** - Bill Cycle - The expiry is set to the date of the first use of the balance, plus a number of billing cycles
Balance Expiry Period	The period between when the voucher is activated and when the balance will expire. Enter one of the following: • Days • Hours
Expiry Period Type	The unit the balance expiry period is calculated in. Select either: • Days/Hours - the balance expiry is calculated in days and hours. • Months - the balance expiry is calculated in months.
Use Wallet Expiry Date	Option to configure the Balance Expiry Date to be the same as the Wallet Expiry Date.

Field	Description
Missing Balance Action	What to do, if this balance type does not already exist in the wallet when the voucher is redeemed. Select one of the following: • **Create Balance** - the system will create the balance type and redeem the voucher. • **Fail Recharge** - the voucher redemption will fail. • **Skip Balance** - the voucher is redeemed, but the system will not create the balance type.
Tax Plan	The tax plan associated with this voucher type. **Note:** For inclusive tax, the tax component will be removed before crediting the subscriber.
Scenario	The scenario which will apply this balance. **Notes:** • This field will only be visible in the screen if the scenarios functionality has been activated. For more information on activating scenarios see *CCS Technical Guide*. • Only required if more than one scenario has been defined for this voucher type. • The scenario value '`Default(All)`' indicates that the balance type applies to all scenarios. If scenarios have been defined, you cannot use the default scenario. • If only one scenario has been defined, you do not have to specify a scenario.
Allowed Product Types	The product types which vouchers of this type can recharge for this balance type. **Tip:** An empty **Allocated** list means that the balance type can be recharged for all product types.
Replace Balance	Whether to replace the existing balance for the balance type with the new value when the reward is applied.
New Bucket	Whether to create a new bucket for the balance type when the reward is applied.
Configuration Restriction	Restricts the day, month and year that a balance starts and ends. Select the following: • **Applies From** - Sets the date when balances of this type can be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date. • **Applies Until** - Sets the date when balances of this type can no longer be redeemed by vouchers of this type. To activate this field, select the check box to the left of the field, then, in the date selection boxes, select the day, month and year for the end date.

Expiration Date Behavior

Reward balance expiration dates behave as described in this section.

Not selecting **Create New Bucket** and **Replace Existing Balance** results in a reward applying to the existing resource bucket. This configuration determines the following expiration date behaviors:

- If the existing balance in the bucket has an expiration date already set, including an infinite expiration date, NCC will not set a new expiration date for the resource that is less than the bucket balance's existing expiration date.
- When you set everything directly through operator screens or a PI command, creating a new reward into an existing bucket cannot set an expiration date if the original resource does not have an expiration date set. However, when you use Promotion Manager screens to add or edit a multi-balance reward, the **Set** option for **Balance Expiry Policy** allows you to set a balance expiration date when a previous date does not exist.

In general, rewards cannot reduce existing balance expiration dates.

When selecting **Create New Bucket** or **Replace Existing Balance**, setting an earlier expiration date is allowed because:

- Creating a new bucket allows the reward expiration date means to be set while not affecting existing buckets.
- Replacing and existing bucket specifies an explicit choice to replace the existing bucket in which case the new expiration date can be set.

Adding multi-balance reward

Follow these steps to configure Multi-Balance Rewards for a new promotion.

1. Go to the **Rewards** tab on the New Promotion or Edit Promotion screen.
2. Click **Add Balance**.

   Result: You see the Add Multi-Balance Reward screen.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Multi-balance reward fields.
4. Click **Apply**.

   Result: You will be returned to the **Rewards** tab and the new record will be displayed in the balance type grid.

Related topic

Multiple balance type

Editing multi-balance reward

Follow these steps to edit the Multi-Balance Reward for an existing promotion.

1. Go to the **Rewards** tab on the New Promotion or Edit Promotion screen.
2. Select the required Multi-Balance reward in the grid and click **Edit Balance**.

Result: You see the Edit Multi-Balance Reward screen.

3. Edit the fields with the required changes.

   For more information about the fields on this screen, see Multi-balance reward fields.

4. Click **Apply**.

   Result: You will be returned to the **Rewards** tab and the new record will be displayed in the balance type grid.

Related topic

Multiple balance type

Deleting multi-balance reward

Follow these steps to remove a Multi-Balance Reward record for an existing promotion.

1. Go to the **Rewards** tab on the New Promotion or Edit Promotion screen.
2. Select the Multi-Balance reward to delete in the grid and click **Delete Balance**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK** to delete the record from the database.

Related topic

Multiple balance type

Notification

Use the **Notification** tab to define the following for a promotion:

- Announcements to play for a promotion
- Subscriber notifications that can be sent when the promotion is applied
- Pre-promotion notifications for Tracker Threshold or Tracker Expiry events

Notification fields

This table describes the function of each field.

Field	Description
Announcement Required	Allows you to select an announcement to be played by the Play Next Promotion feature node for this promotion. Tick the check box to enable the Announcement Set and Announcement Entry fields. **Note:** If you want to play the announcement configured here, ensure that on the Play Next Promotion feature node, the Play Announcement check box is selected in the Promotion Announcement area. For more information, see *CCS Feature Node User's Guide*.

Field	Description
Announcement Set	The ACS Announcement set which contains the announcement to play for this promotion.
Announcement Entry	The announcement to play for this promotion.
Subscriber Notification When Promotion Applies	Notification sent to subscriber informing them when the promotion applies. **Note:** This field is populated from ACS Notifications subsystem.
DAP Notification When Promotion Applies	DAP Notification sent to subscriber informing them when the promotion applies. **Note:** To use the DAP notifications, you must have Data Access Pack installed.
Subscriber Notifications sent before promotion is applied	This grid displays the pre-promotion notifications configured for Tracker Threshold or Tracker Expiry promotions. For more information, see Pre-promotion notifications.

Adding notifications

Follow these steps to add Notification details for a new Promotion.

1. In the New Promotion screen, select the **Notification** tab.

   Result: You see the notification configuration options.

2. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Notification fields.

   To add Pre-promotion notifications, see Adding pre-promotion notification.

3. Click **Save**.

   Result: You return to the Promotion Manager screen with the new Promotion listed in the grid.

Related topic

Notification

Editing notifications

Follow these steps to edit Notification details for an existing promotion.

1. Follow the steps listed in Editing a promotion to display the Edit Promotion screen, **Promotion** tab.
2. Edit the fields with the required changes.

   For more information about the fields on this screen, see Notification fields.

   To edit Pre-promotion notifications, see Editing pre-promotion notification.

3. Click **Save**.

Related topic

Notification

Pre-promotion notifications

A set of subscriber notifications can be sent before the Tracker Threshold or Tracker Expiry promotion is applied.

Note: Pre-promotion subscriber notifications cannot be configured for promotions which are not associated with Tracker Threshold or Tracker Expiry event types.

Pre-promotion notification fields

This table describes the function of each field.

Field	Description
Subscriber Notification	Type of pre-promotion notification sent to subscriber.
Balance Condition	Applicable for tracker threshold promotions. A combination of fields used to configure notifications by changes to balance or delta values, that is, the notification will only be sent to subscribers who have met the specified balance or delta conditions. • **Balance Value** – Indicates the current balance value • **Delta Value** – Indicates the value by which event will have changed the current balance

Adding pre-promotion notification

Follow these steps to configure a Pre-promotion notification.

1. Go to the **Notification** tab on the New Promotion or Edit Promotion screen.
2. Click **Add**.

   Result: You see the Add Pre-promotion Notification screen.
3. Enter data in the fields to configure this record.

   For more information about the fields on this screen, see Pre-promotion notification fields.
4. Click **Apply**.

   Result: You will be returned to the **Notification** tab and the new record will be displayed in the subscriber notifications grid.

Related topic

Pre-promotion notifications

Editing pre-promotion notification

Follow these steps to edit a Pre-promotion notification.

1. Go to the **Notification** tab on the New Promotion or Edit Promotion screen.
2. Click **Edit**.

Result: You see the Edit Pre-promotion Notification screen.

3. Edit the fields with the required changes.

   For more information about the fields on this screen, see Pre-promotion notification fields.

4. Click **Apply**.

   Result: You will be returned to the **Notification** tab and the new record will be displayed in the subscriber notifications grid.

Related topic

Pre-promotion notifications

Deleting pre-promotion notification

Follow these steps to remove a Pre-Promotion record for an existing promotion.

1. Go to the **Notification** tab on the New Promotion or Edit Promotion screen.
2. Select the pre-promotion notification to delete in the grid and click **Delete**.

   Result: You see the Delete Confirmation prompt.

3. Click **OK** to delete the record from the database.

Related topic

Pre-promotion notifications

30
Tracker Extensions Management

This chapter explains how to configure Tracker Extensions for Oracle Communications Network Charging and Control Promotion Manager.

This chapter contains the following topics.

Tracker Extensions Module

Tracker Extensions Module

The Promotion Manager **Tracker Extension** tab is used to configure extension period of the expiry date for the expenditure tracker balances.

Tracker Extensions tab columns

This table describes the content of each column.

Column	Description
Balance Type	Name of the balance type used by the tracker.
Domain Name	Name of the domain linked to the expenditure tracker.
Days	The number of days by which the expiry period is extended.
Weeks	The number of weeks by which the expiry period is extended.
Months	The number of months by which the expiry period is extended.
Retries	The number of times a failed tracker extension entry was retried.
Status	Indicates the extension status, that is, if the expiry date is: • In progress (currently being extended) • Completed (extension completed) • Failed • If the entry is scheduled for a retry
Last Changed	The date indicating when the entry was created or last modified.

Tracker Extensions buttons

This table describes the function of each button.

Button	Description
Insert	Use to create new tracker extension records.

Button	Description
Update	Use to update existing tracker extension records. The button is only enabled if an entry has been selected in the table which has a **Status** value of `Completed`. See Editing tracker extension entry for more information.
Delete	Use to delete the selected tracker extension record.
Retry	Use to force a failed tracker extension entry to try again. The button is only enabled if an entry has been selected in the table which has a **Status** value of `Failed`. See Retrying failed entry for more information.
Close	Use to close the current screen and return to the previous screen in the screen hierarchy. **Note:** Any changes that have been made on-screen will not be saved (unless **Insert** or **Update** has been clicked previously).

Tracker Extensions tab fields

This table describes the function of each field.

Field	Description
Filter By Status	List of valid status values for tracker extension entries to be sorted by in the main table. Select a status value and click **Refresh** to display matching records in the table.
Tracker Balance Type	List of balance types currently not associated with a tracker extension. **Note:** Once a expiry date is extended for a balance type, it will not be available in this drop-down list.
Extend	Period by which the expiry date is extended by expressed in: • Days • Weeks • Months

Adding tracker extension entry

Follow these steps to add a new tracker extension entry.

1. On the **Tracker Extensions** tab, select the service provider from the drop down box.

   Result: The table below displays the tracker extension entries currently defined for this service provider.

2. Select the required **Tracker Balance Type** from the drop-down list.
3. Enter the **Extend By** period.
4. Click **Insert**.

   Result: A warning is displayed informing of a possible delay in updating the subscriber wallets.
5. Click **Yes** to continue.

   Result: The new record will be displayed in the subscriber notifications table.

   Note: For more information on the fields available on this screen, see Tracker Extensions tab fields.

Editing tracker extension entry

Follow these steps to update an existing tracker extension entry.

Note: Only those entries in the table which have the status value of `Completed` can be updated.

1. On the **Tracker Extensions** tab, select the service provider from the drop down box.

   Result: The table below displays the tracker extension entries currently defined for this service provider.
2. Select an entry from the table with status of `Completed`.
3. Enter the new **Extend By** period.
4. Click **Update**.

   Result: The modified record will be displayed in the subscriber notifications table.

   Note: For more information on the fields available on this screen, see Tracker Extensions tab fields.

Retrying failed entry

Follow these steps to trigger a failed entry to try again.

Note: Only those entries in the table which have their status value of `Failed` can be retried.

1. On the **Tracker Extensions** tab, select the service provider from the drop down box.

   Result: The table below displays the tracker extension entries currently defined for this service provider.
2. Select an entry from the table with status as `Failed`.
3. Click **Retry**.

   Result: The record will be displayed in the subscriber notifications table with Status value of `Retry`.

   Note: For more information on the fields available on this screen, see Tracker Extensions tab fields.

Deleting tracker extension entry

Follow these steps to delete a tracker extension entry from the main table.

1. On the **Tracker Extensions** tab, select the service provider from the drop down box.

   Result: The table below displays the tracker extension entries currently defined for this service provider.

2. Select the tracker extension entry to delete in the table and click **Delete**.

   Result: You see the Delete Confirmation prompt.

   Note: Only entries with status of `Completed` or `Failed` may be selected for deleting.

3. Click **OK** to delete the record from the database.

31
CCS Charging Feature Nodes

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS charging feature nodes.

This chapter contains the following topics.

Balance Cascade Override

Billable Event

Business Prefix Branch

Call Information SMS

Cost Call Duration Branching

Credit Wallet Transfer

Declined Billing Cause

Direct Unit Charge Request

Get CUG Details

Named Event

Play Tariff Plan Announcement

Set Active Domain

Set BE EDR

Set Discount

Set Tariff Plan Rule

Set Wallet Type

Tariff Plan Override

Universal ATB

Variable Amount Recharge

Voice Call Cost

Balance Cascade Override

The Balance Cascade Override node is used to specify a balance cascade to override the balance cascade that otherwise would have been used for the next charging action.

The balance cascade can be specified in the node or defined in a profile field.

Node exits – Balance Cascade Override

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Success	The balance cascade has been overridden.

Configuration fields – Balance Cascade Override

This table describes the function of each field.

Field	Description
From Profile	If selected then the **Select Balance Cascade Override** frame become enabled.
Manual Definition	If selected then the **Balance Cascade Override Selection** frame becomes enabled.
TagID Data Type	Specifies the data type to use when **From Profile** is selected. **Note:** This affects the profile location list.
TagID Location	Specifies the profile to use when **From Profile** is selected.
TagID Field	The profile field containing the balance cascade to use instead of the one currently configured for the next node in the control plan, that has a balance type cascade associated with it.
Balance Cascade	When **Manual Definition** is selected, this defines the override balance type cascade for the next node in the control plan that has a balance type cascade associated with it, such as an ATB or Named Event node.

Configuring the node – Balance Cascade Override

Follow these steps to configure the node.

1. In the Balance Cascade Override area select either:
   - **From Profile**, or
   - **Manual Definition**.
2. **Result:** The relevant Balance Cascade Override fields are made available.
3. Select the Balance Cascade to override the balance cascade defined for the next charging action. If you selected:
   - **Manual Definition**, Select the **Balance Cascade** from the drop down list. Only valid balance cascades will be available.

- **From Profile**, Select the **TagID Data Type**, **Location** and **Field** containing the balance cascade you want to use from the drop down lists.

4. Click **Save**.

   Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Billable Event

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the **Named Event** feature node.

The Billable Event feature node is used to bill the caller for a defined number of billable events with a defined discount.

The action is one of:

- Billing the caller wallet
- Reserving the event cost
- Confirming the cost can be billed
- Canceling the reserved event cost
- Retrieving the cost of the event

The number of events is either configured in the node, or stored at a selected location.

Node exits – Billable Event

This node has one entry and four exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle Voucher and Wallet Server billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

Exit	Cause	Description
1	Success	The caller has successfully exited the node with the billing event successfully completed. **Note:** This includes: • A negative wallet balance when the allow negative balance option has been selected (allow not selected would result in the No Credit branch being taking instead). • Any single Reserve or Confirm requests regardless of wallet balance.
2	No Credit	The caller has no credit and the allow negative balance option is off.
3	Billing Fault	An error has occurred within the billing function. Possible faults are: • multiple reservation attempts (just a single reservation at a time is permitted). • confirm or revoke requests when there has not been a previous reserve request.
4	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Billable Event

This table describes the function of each field.

Field	Description
Event Class	List of event types that can be billed.
Billable Event	List of events for the Event Class selected.
Number of Events	The number of events to bill the subscriber. This value can be obtained from: • **Number of Events** field, when the **Node dialog** option is selected, or • **Number of Events Field** location, when the **Profile** option is selected. **Note:** The number of events value is hexadecimal, for example: 10 in the **Number of Events** field is actually 16 events.
Discount Percentage	The percentage discount to apply to the billable event cost.

Field	Description
Allow Negative Balance	Indicates if the caller wallet balance is allowed to become negative as a result of this event billing (includes an already negative wallet balance before this billable event).
Billable Event Feature Selection	This node has five modes of operation: • Direct Event - requests the billing engine to charge the caller wallet with the cost of the event(s). • Reserve Event - requests the billing engine to reserve the cost of the event(s) against the caller wallet. • Confirm Event - confirms the previously reserved event cost. • Revoke Event - cancels the previously reserved event cost. • Cost of Event - requests the billing engine to return the cost of the event(s). **Note:** The option selected here will affect the list of available items to select in the Event Class and Billable Event.
Store Cost	Indicates if the billed cost is to be saved in the Charge Cost location.
Charge Cost	Location to save the billed cost into for later use.

Configuring the node – Billable Event

Follow these steps to configure the node.

Warning: If using Diameter, refer to *Diameter Control Agent Technical Guide* before configuring this node.

1. Select the mode of operation for this instance of the node:
   - **Direct Event** - to bill the caller for the event cost.
   - **Reserve Event** - to reserve the event cost against the caller wallet balance.
   - **Confirm Event** - to confirm the reserved event cost.
   - **Revoke Event** - to cancel a previously made reserve request.
   - **Cost of Event** - to retrieve the cost of the event.

   Note: This affects content for Event Class and Billable Event lists.
2. From the **Event Class** drop down list, select the class of this billable event.
3. From the **Billable Event** drop down list, select the event to bill.
4. In the **Number of Events** section, select the option to use to obtain the number of events to bill.

   Either select:
   - **Node dialog** to obtain the value from this node, or
   - **Profile** to obtain the value from a location.

Result: The relevant Number of Events fields are made available.

5. If **Node dialog:** In the **Number of Events** field, type the number of events to bill.
   - If **Profile** :Select the **Number of Events Data Type**, **Location** and **Field** from the drop down lists.

   Warning: The number of events value in either field is a hexadecimal number, for example 10 entered is actually 16 events.
6. In the **Discount** field, type the discount percentage to apply to the billed event cost.
7. To permit a negative wallet balance when reserving or billing, select the **Allow** check box.
8. If the mode of operation is:
   - Direct Event,
   - Confirm Event, or
   - Cost of Event

   and the cost is to be saved, select the **Store Cost** check box.
9. If the Store Cost check box has been selected, select the **ChargeCost Data Type**, **Location** and **Field** from the drop down lists.
10. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Business Prefix Branch

The Business Prefix Branch node checks to see if the caller has dialed the business prefix as part of their number. If so, the node strips the prefix from the dialed number and routes accordingly.

The Business Prefix is configured in the **Resource Limits** tab on the Resources screen within CCS.

Node exits – Business Prefix Branch

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Set Personal	The caller has not dialed the Business Prefix.

Exit	Cause	Description
3	Set Business	The caller has dialed the Business Prefix.

Configuring the node – Business Prefix Branch

This node requires no configuration data. You may change the **Node name**, if required.

Call Information SMS

The Call Information SMS node is used after a uATB node to send an SMS notification to the user with regards to the duration and cost of the call, using templates defined for each language. The user can also configure the following items in the node:

- The template to use to send the message (configured through the **ACS > Configuration > Notification** screens)
- The currency in which to display the cost of the call

The following parameters (some use strings configured in CCS, see *CCS User's Guide,* can be included in the messages:

- Duration - hours/minutes/seconds (available only after a call)
- Call cost (available only after a call)
- Wallet type
- Wallet expiry
- Balances
- Balance expiry

Notes:

The node will filter out all Expenditure Balance Types and not include them in the SMS notification message. See *CCS User's Guide - Balance Types* topic.

Node exits – Call Information SMS

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node, a text message has not been sent.
2	Success	A text message has been successfully sent to the short message service.

Configuring the node – Call Information SMS

Follow these steps to configure the node.

1. In the SMS Termination Number Selection panel, select the location of the number to which the SMS will be sent. Select either:
   - **Number Buffer**, or
   - **Profile String**

   Result: The relevant fields are made available.
2. If **Number Buffer:** Select from the **Number Buffer** drop down list.

   If **Profile String:** Select from the **Profile String Data Type**, **Location** and **Field** drop down lists.
3. Select the **Application** where the notification template is defined from the drop down list.

   Note: ACS will be used by default.
4. Select the notification **Type** from the drop down list.

   Defaults to CallInfoDurationCost for application ACS.
5. To use the subscriber's wallet currency when constructing the cost string for the SMS, select **Use Wallet Cost Currency**.
   - To use a different currency, select **Override Cost Currency** and select the currency you want from the drop down list.
6. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Message parameters – Call Information SMS

Message parameters included in the notification template message text are searched for and replaced with an appropriate value.

Here is a list of available parameters.

Parameter	Description
$1	Call length hours (not zero padded).
$2	Call length minutes (not zero padded).
$3	Call length seconds (not zero padded). Examples.

Parameter	Description
$4	The Balance Types details of the Wallet. Details include: • Balance description • Balance currency • Balance amount • Balance expiry (either the number of days to expiry or the no balance expiry text). **Note:** The balance details string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$5	The wallet expiry details. One of the following: • The number of days remaining before the wallet expires • The no expiry date text defined for wallets that have no expiry date set **Note:** The wallet expiry date text is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. See *CCS User's Guide* for details.
$6	The cost details including the currency and amount. **Note:** The cost string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. See *CCS User's Guide* for details.
$7	The wallet description. **Note:** The wallet description is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$8	The total call length in hours, minutes and seconds. Example: 1:16:51.
$9	The total call length in minutes and seconds. Example: 76:51 **Note:** Use parameters $8 or $9 instead of using parameters $1, $2 and $3.

Examples for parameters $1, $2, and $3:

Actual call length	$1	$2	$3
1 hour, 15 minutes and 23 seconds	1	15	23
28 minutes and 5 seconds	0	28	5

Message examples – Call Information SMS

Here are some example templates and the corresponding messages generated by the Call Information SMS node.

Example 1

A template of:

Call Dur: $1 hr $2 min $3 secs - call cost $6 - a/c type $7 - exp details $5- bal $4

will send the message:

"Call Dur: 0 hr 7 min 42 secs – call cost Gen Bal AED7.68 – a/c type Eng Private - exp details no expiry – bal Eng Gen Bal AED7287.21-no expiry"

Example 2

A template of:

Call Dur: $9 minutes - call cost $6 - a/c type $7 - exp details $5- bal $4

will send the message:

"Call Dur: 7:42 minutes – call cost Gen Bal AED7.68 – a/c type Eng Private - exp details no expiry – bal Eng Gen Bal AED7287.21-no expiry"

Cost Call Duration Branching

Allows for balance type and cost threshold branching, or call duration branching, on the values returned for the last charged call.

This feature node when combined with the **Store Profile Field** and **Retrieve Profile Field** feature nodes will allow a service to be defined in a control plan where a configured number of the free daily connections of less than a configured number of seconds can be allocated to a group of specified numbers.

This feature node is used for one of:

- Call cost branching
- Call duration branching

Depending on the mode, either the balance type and cost threshold (call cost branching) or just the duration threshold (call duration branching) will be configured on the feature node, making these parameters instance specific within the control plan. Optionally, the cost per duration may be stored in a selected profile field.

This feature node when used for call cost branching will limit the balance types that can be selected by the operator to only those that are used as chargeable balance types; hence this does not include ‘Expenditure’ and ‘Cross Balance Type Discount’ balance types.

Node exits – Cost Call Duration Branching

This node has one entry and five exits. The number of exits cannot be changed.

Note: The reason an exit is taken depends on the mode in use (cost or call duration).

Exit	Cause	Description
1	>	The wallet balance or call duration is greater than the configured threshold. Telephony actions are allowed after this branch.
2	<	The wallet balance or call duration is less than the configured threshold. Telephony actions are allowed after this branch.
3	=	The wallet balance or call duration is the same as the configured threshold. Telephony actions are allowed after this branch.
4	No Balance Found	The specified balance type was not found in the subscriber's wallet, or the current domain does not support the required actions. Telephony actions are allowed after this branch.
5	Unsupported	Any error/failure encountered.

Note: A zero wallet balance could potentially use either exit 2 or exit 3 depending on the threshold value.

Configuring the node – Cost Call Duration Branching

Follow these steps to edit the node configuration.

1. Select the **Branch Type** to use.

   Either:

   - **Cost**, or
   - **Call Duration**

   Result: The relevant fields are made unavailable.

2. If you selected **Cost**, select which balance type(s) to use.

   Either:

   - Tick the **Sum All** check box to use all cash balance types, or
   - Select from the **Balance Type** drop down list to use a single cash balance type.

   Note: The Balance Type drop down list shows all **Cash** balance types for the current ACS customer that can be used for charging. This excludes all **Expenditure** and **Cross Balance Type Discount** balances.

3. For both **Cost** and **Call Duration**, type the comparison balance or duration threshold to use in the **Threshold** field.

4. To store the call cost or duration tick the **Enabled** check box in the Store Cost/ Duration area. Then, select the **Destination** profile from the **Data Type**, **Location** and **Field** drop down lists.
5. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Credit Wallet Transfer

The Credit Wallet Transfer node allows cash credit to be converted into an alternative balance type for a subscriber's own account or the account of an alternate subscriber.

Credit transfers only apply to peer-to-peer and service bundle transfer definitions. See *CCS User's Guide* for further information.

Node exits – Credit Wallet Transfer

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	The current charging domain does not support all the required services needed by the feature node.
2	Success	Credit transfer completed successfully.
3	Unauthorised	The product type of the purchaser was not found in the limited product type list associated with this credit transfer.
4	Bad PIN	The PIN of the purchaser failed to validate. This may be due to the: • Supplied PIN was invalid • PIN was required but was not supplied • Subscriber does not have a PIN associated with this wallet
5	Invalid Transfer	The credit transfer short name specified was invalid.

Exit	Cause	Description
6	Error	Various general errors which may, amongst others, be: • Configuration related • Insufficient funds related • Purchaser or recipient wallet related

Configuration fields – Credit Wallet Transfer

This table describes the function of each field.

Field	Description
Recipient CLI	The phone number of the credit transfer recipient, found in one of the ACS phone-number buffers. **Note:** Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.
Purchasing Subscriber PIN	The PIN number for the purchasing subscribers wallet the credit is coming from, found in one of the ACS phone-number buffers. **Note:** Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.
Recipient Wallet Type Category	The destination wallet for the credit transfer. Can be one of: • Primary wallet • Secondary wallet • Retrieve from buffer **Notes:** • The buffer content must be PRIMARY or SECONDARY. • Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.
Credit Wallet Transfer Name Selection	Select the Credit Transfer short name (this list is configured in the CCS Transfer Management screen. Can be one of: • **RetrieveFromNode** (Credit Wallet Transfer list) • **RetrieveFromBuffer** (Credit Wallet Transfer Name section, Credit Wallet Transfer list) • **RetrieveFromProfile** (Credit Wallet Transfer Name section, Data Type, Location and Field lists) **Note:** Location Area Code and Cell Identity buffers are not available for use; all remaining phone-number buffer types are valid.

Field	Description
Credit Wallet Transfer	Select the Credit Wallet Transfer to use in the feature node. This is configured in the CCS Transfer Management screen. This option is enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromNode**:
Credit Wallet Transfer Name	This field is enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromBuffer**: • **CwTrName1** - The name of the Credit Wallet Transfer. These fields are enabled when the **Credit Wallet Transfer Name Selection** is set to **RetrieveFromProfile**: • **CwTrName2 Data Type** - The data type of the Credit Wallet Transfer name. • **CwTrName2 Location** - The location of the Credit Wallet Transfer name. • **CwTrName2 Field** - The second name field for the Credit Wallet Transfer.

Configuring the node – Credit Wallet Transfer

Follow these steps to configure the node.

1. From the **Recipient CLI** drop down list, select the buffer containing the phone number of the credit transfer recipient.
2. From the **Purchaser PIN** drop down list, select the buffer containing the purchaser wallet PIN.
3. From the **Recipient Wallet Type Category Selection** options, select the wallet to use or the location of the wallet to use.

   Note: If the buffer option is selected, from the **Wallet Type Category** drop down list also select the buffer containing the wallet type.
4. From the **Credit Wallet Transfer Selection** options, select the location of the credit transfer details.

   Note: The following fields require completion depending on the option selected.
5. If **Feature Node** option selected:

   • from the **Credit Wallet Transfer** drop down list, select the Credit Transfer short name to use.

   or

   If **Buffer** option selected:

   • from the **CreditWalletTransfer** drop down list, select the buffer containing the Credit Transfer short name to use.

   or

   If **Profile** option selected:

- from the **Data Type, Location and Field** drop down lists the profile the Credit Transfer short name is located in.

Note: The short name in a buffer or profile field must match a name configured in the **Transfer Management** screen.

6. Click **Save**.

Result: The purchaser and recipient may receive SMS notifications, depending on the setting of the notification opt out flag and the result of the transfer. See *CCS User's Guide*, Adding Subscribers for configuration instructions and SMS notifications for messages and their content.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

SMS notification – Credit Wallet Transfer

This table describes the SMS notifications and the conditions enabling them to be sent.

Message to	MSISDN	Transfer status	Message content
Purchaser	Differs from recipient	Success	Cost of the transfer plus the recipient MSISDN
Purchaser	Differs from recipient	Failure	Alternative failure message.
Purchaser	Same as recipient	Success	Cost of the transfer plus credits received.
Purchaser	Same as recipient	Failure	Alternative failure message.
Recipient	Differs from purchaser	Success	Credits received plus the purchaser MSISDN.

Declined Billing Cause

The Declined Billing Cause node sends the cause of a billing failure to the subscriber.

This feature node provides additional functionality for the UATB feature node when placed after the "declined (no funds)" branch of the UATB feature node.

Node exits – Declined Billing Cause

This node has one entry and seven exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Not Declined	The billing was not declined.

Exit	Cause	Description
2	No Funds	The billing was declined due to lack of funds.
3	Max Concurrent	Number of concurrent users for this wallet has been exceeded.
4	Restricted Rating	Rating/ tariff for this call destination has not been established.
5	Invalid Wallet State	Wallet is frozen.
6	Blocked Destination	The billing was declined due to the destination being barred.
7	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuring the node – Declined Billing Cause

This node requires no configuration data. You may change the **Node name**, if required.

Direct Unit Charge Request

The Direct Unit Charge Request node retrieves wallet information and sends it to the billing engine.

Node exits – Direct Unit Charge Request

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The request has been successfully applied to the BE.
2	Not Enough Info	No call information was found.
3	Billing Fault	Any BE error (such as insufficient credit or timeout).
4	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Direct Unit Charge Request

This table describes the function of each field.

Field	Description
Use Actual Duration	Uses the actual call duration for billing.
Override Duration	Uses the specified duration time for billing. You must enter a value in the Duration Time field.

Field	Description
Duration Time	Time, in seconds, to use for billing. A value of 0 or greater is accepted.
Debit	Allow the request to perform a debit instead of a credit.
Credit	Allow the request to perform a credit instead of a debit.
Ignore Wallet Balance	Allows the wallet balance to go negative instead of being rejected (used only when the account reference is configured to do so.)

Configuring the node – Direct Unit Charge Request

Follow these steps to configure the node.

1. Select the duration to use for billing:
   - **Actual Duration** – To bill for the actual call duration.
   - **Override Duration** – To bill for the specified duration (in seconds). You must enter a duration of 0 seconds or greater.
2. Select either the **Debit** or **Credit** options.
3. Select the **Ignore Wallet Balance** check box to allow the wallet balance to go negative.
4. Click **Save**.

Get CUG Details

The Get CUG Details node analyzes the calling and called party numbers to determine whether they are part of a closed user group (CUG). If they belong to the same CUG, then the tariff plan used by the next UATB node is overridden by the tariff plan specified for the CUG in the Resources screens.

Note: If both parties belong to more than one CUG, then the tariff plan from the first CUG to be returned, is normally used.

Node exits – Get CUG Details

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Not In CUG	Either the Calling Party or the Called Party are not in a Closed User Group (CUG), or they are not in the same one.

Exit	Cause	Description
3	In CUG	Both the Calling Party and the Called Party are in the same CUG, and the current tariff plan has been successfully overridden.

Configuring the node – Get CUG Details

This node requires no configuration data. You may change the **Node name**, if required.

Named Event

The Named Event feature node is used to bill the caller for a defined number of named events with a defined discount.

The action is one of:

- Billing the caller wallet
- Reserving the event cost
- Confirming the cost can be billed
- Canceling the reserved event cost
- Retrieving the cost of the event

The number of events is either configured in the feature node or stored at a selected location.

Node exits – Named Event

This node has one entry and four exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle Voucher and Wallet Server billing engine. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

Exit	Cause	Description
1	Success	The caller has successfully exited the node with the billing event successfully completed. **Note:** This includes: • A negative wallet balance when the allow negative balance option has been selected (allow not selected would result in the No Credit branch being taking instead). • Any single Reserve or Confirm requests regardless of wallet balance.
2	No Credit	The caller has no credit and the allow negative balance option is off.
3	Billing Fault	An error has occurred within the billing function. Possible faults are: • multiple reservation attempts (just a single reservation at a time is permitted). • confirm or revoke requests when there has not been a previous reserve request.
4	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuring the node – Named Event

Follow these steps to configure the node.

Warning: If using Diameter, refer to *Diameter Control Agent Technical Guide* before configuring this node.

1. From the **Event Definition**section, select the option to define how the event class and name will be specified.

   Select one of:

   - **Node dialog**to read the event class and named event from the values specified in the dialog
   - **Profile**to read the event class and named event from the**Event Class**and**Event Type**tags in temporary storage

2. If **Node dialog:**

   From the **Event Class** drop down list, select the class of this named event.

   From the **Named Event** drop down list, select the event to bill.

3. If required, select the **Persistent Reservation** check box to write the reservation ID to the **Reservation ID** tag in temporary storage in reserve mode. In commit mode, the

reservation ID will be read from the **Reservation ID** tag in temporary storage. This can be used to pass the reservation ID in an OSD SOAP request, for example.

Note: If you elect to use this feature, set the **CCS.namedEventHandler.reservationPeriod** parameter in the configuration file on the VWS to a suitable value, such as setting the **CCS.namedEventHandler.reservationPeriod** parameter to the maximum time that persistent reservations are allowed open before being confirmed or revoked, as reservations will expire at the end of this period.

4. In the **Number of Events** section, select the option to use to obtain the number of events to bill.

   Select one of:

   - **Node dialog** to obtain the value from this node
   - **Profile** to obtain the value from a profile location

5. If **Node dialog:** In the **Number of Events** field, type the number of events to bill.

   If **Profile**: Select the **Number of Events Data Type**, **Location** and **Field** from the drop down lists.

   Note: The number of events value in the **Node Dialog** is a decimal number, but the value from the **Profile** field depends on the type of the profile:

   - **INTEGER**: the value is a decimal number
   - **STRING or NSTRING**: if the string has a "0x" prefix then the value is a hexadecimal number; if the string does not have a "0x" prefix then the value is a decimal number

6. In the **Discount Percentage** field, type the discount percentage to apply to the billed event cost.
7. To permit a negative wallet balance when reserving or billing, select the **Allow** check box.
8. Select the mode of operation for this instance of the node:

   - **Direct Event** - to bill the caller for the event cost.
   - **Reserve Event** - to reserve the event cost against the caller wallet balance.
   - **Confirm Event** - to confirm the reserved event cost.
   - **Revoke Event** - to cancel a previously made reserve request.
   - **Cost of Event** - to retrieve the cost of the event.

   Note: This affects content for event class and named event lists.

9. If the mode of operation is:

   - Direct Event
   - Confirm Event
   - Cost of Event

   and the cost is to be saved, select the **Store Cost** check box.

10. If the **Store Cost** check box has been selected, select the **ChargeCost Data Type**, **Location** and **Field** from the drop down lists.
11. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Play Tariff Plan Announcement

The Play Tariff Plan Announcement node plays the announcement associated with the selected tariff plan.

The tariff plan can be selected in the node or specified in a profile tag field.

Node exits – Play Tariff Plan Announcement

This node has one entry and 2 exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The node successfully found the selected tariff plan and played the associated announcement.
2	Error	An error/failure occurred finding the selected tariff plan or when loading and playing the announcement.

Configuring the node – Play Tariff Plan Announcement

Follow these steps to configure the node.

1. In the Tariff Plan Source area select:
   - **From Profile**
   - **Manual Definition**, or
   - **Active Tariff Plan**.
2. If **From Profile**: Select the **Data Type**, **Location** and **Field** drop down lists containing the required tariff plan.

   If **Manual Definition**: Select the **Tariff Plan** from the drop down list.

   If **Active Tariff Plan**: Then the currently active tariff plan will be used.
3. Click **Save**.

   Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.

- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Set Active Domain

The Set Active Domain node allows the selection of a billing domain for use by the current top-up/voucher redeem activity for the following management types:

- Wallet
- Voucher
- Rating
- Subscriber
- Service

This node also allows changing the domain type at any point within a control plan.

For example, if TUS is installed (using the default VoucherDomainType from **eserv.config** for TUS) then the domain can be changed mid call to UBE and vice versa with the Set Active Domain node.

Node exits – Set Active Domain

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The billing domain to use was set successfully.
2	Error	A system error of some kind occurred. The billing domain to use has not set.

Configuration fields – Set Active Domain

This table describes the function of each field.

Field	Description
Domain options	The domain to set can be either the name of a domain or a type of domain. The drop down list available will depend on the option selected here.
Name	A drop down list of all the valid domain names. The domain names are maintained in the **Service Management > Domain** tab screens.
Type	A drop down list of all the valid domain types. The domain types are maintained in the **Service Management > Domain** tab screens.

Field	Description
Management check boxes	These are the chassis actions to apply to the selected domain. The availability of check boxes for selection is maintained with the domain in the **Service Management > Domain** tab screens.
Rating	Sets the rating domain.
Service	Sets service chassis action.
Subscriber	Sets the subscriber chassis action.
Tracker	Sets the tracker chassis action.
Voucher	Sets the voucher chassis action.
Wallet	Sets the wallet chassis action.

Configuring the node – Set Active Domain

Follow these steps to configure the node.

1. Select the option to use to identify the domain:
   - Domain Name
   - Domain Type
2. From the **Name** or **Type** drop down lists, select the domain name or type.

   Notes:
   - When **Domain Name** is selected, the **Type** is automatically filled.
   - When **Domain Type** is selected, the **Name** field is blank and disabled.
   - The domain names and types are maintained in the **Service Management > Domain** tab screens.
3. Optionally select the **Management** check boxes allowed to set the required chassis action for the domain:
   - Service
   - Subscriber
   - Tracker
   - Wallet
   - Voucher

   Notes:
   - The defaults are: Service - unselected, the others except the Tracker option - selected. The Tracker option will only be available if the domain type is set to `UBE`.
   - The **Service** check box should only be selected with due caution and a thorough understanding of the potential consequences. See *CCS User's Guide*.
4. Click **Save**.

Note: The optional check boxes are available for use once they have been selected in the **Service Management > Domain** tab screens.

Example use of node – Set Active Domain

The following is an example of how this node can be used under the existing available features.

Example	Description
Scenario	A system is setup to redeem UBE vouchers, but this control plan requires the redemption of a voucher.
Solution	Select a domain type of `TUS`, then select the voucher check box.
Result	All subsequent voucher requests will be made to the TUS servers instead of the UBE.

Set BE EDR

The Set BE EDR node alters and adds EDR tags in EDRs generated by slee_acs during call flow. The EDR tag must be specified. The value can be static or populated from a profile field. If the tag already exists on the EDR, the value of the tag is overridden.

Node exits – Set BE EDR

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	Existing BE EDR tag details successfully over-ridden, new tag appended.
2	Unsupported	Either error / failure or the Domain being used does not support this feature node.

Configuration fields – Set BE EDR

This table describes the function of each field.

Note: Location/Field are mutually exclusive from Fixed Value.

Field	Description
EDR Tag	The tag to set the value to. One of: • A new tag to add to the EDR • The EDR tag to replace the value of This field must be between 1 and 50 characters long. This field is required. **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -_ and spaces.

Field	Description
Data Type, Location, Field	The type, location and field of the profile block that contains the required field.
Field	The profile field that contains the value to use for the EDR Tag.
Context Field	The call context field to use for the EDR Tag. For more information about call context fields, see *ACS User's Guide*. **Note:** The entries in this field are a sub-set of the fully available set of call context fields.
Fixed Value	Select the **Data Type** of **Fixed Value** to see this field. Value to use for the EDR Tag This field must be between 1 and 50 characters long. **Warning:** The only characters which can be used in this field are 0-9, a-z, A-Z, -_ and spaces.
Context Number	When selected, normalization occurs on fields selected from the Context Field based upon capability and rules.

Configuring the node – Set BE EDR

Follow these steps to configure the node.

1. In the **EDR Tag** field, enter the string you want to use as the EDR field label.
2. To set the EDR Tag value or source:
   - From a **profile field**, select **Get value from profile variable** radio button.
   - Enter a f**ixed value**, select **Get value from profile variable** radio button.
   - From a **CCS context** field, select **Get value from CCS context field** radio button.
3. **From a profile field:**
   a. Select the field from the **Data Type**, **Location** and **Field** drop down lists.
   b. Click **Save**.
4. **From a fixed value:**
   a. Select the **Data Type** field.

      Result: The screen changes, the **Fixed Value** field replaces the **Location** and **Field** list boxes.

   b. Type the value in the **Fixed Value** field.

      Note: To revert to a profile field selection, select an entry from the Data Type drop down list.

   c. Click **Save**.
5. **From a CCS context field:**
   a. Select the field from the drop down list.

b. Select the **Context Number** check box to have the CCS context field value normalised.

   Un-select to use the CCS context field value as stored.

c. Click **Save**.

For more information about the fields this node uses, see Configuration fields.

Set Discount

The Set Discount node retrieves discount information from the specified location and uses that information for any subsequent billing requests. The discount information collected by this node overrides the last set discount node encountered while traversing a Control Plan.

Note: The discounts provided by the node are applied in addition to any existing discounts.

Node exits – Set Discount

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	Discount information retrieved successfully.
2	Unsupported	Either: • General error or failure • The Domain being used does not support this feature node

Configuration fields – Set Discount

This table describes the function of each field.

Field	Description
Discount Override Source	Takes the discount from either: • The configured profile (From Profile option) • This node (Manual Definition option)
Select Discount Override From	The profile **Data Type**, **Location** and **Field** (in decimal) for the discount information. Available when From Profile option is selected.
Maximum Charge	The maximum charge allowed for the call.

Field	Description
Discount Period *n*	Allows up to ten discounts. Each discount is configured as a percentage. This will be applied to the corresponding period for the rate in the tariff plan used for the charge. Negative percentages may be specified, allowing the cost to be increased instead of decreased. The number of Discount Periods is maintained through **Add Next** (to add a new entry) or **Remove Last** (remove the most recently added entry).

Configuring the node – Set Discount

Follow these steps to configure the node

1. Select the source for the discount from the **Discount Override Source** options.

   Either:

   - **From Profile** (retrieves the discount from the specified profile block and tag)
   - **Manual Definition** (retrieves the discount from this node configuration).

2. If **From Profile** option used:

   a. From the drop down lists in the Select Discount Override From area, select the profile data type, location and field where the discount is stored.

   b. Click **Save** to complete this procedure.

3. If **Manual Definition** used:

   a. Type the maximum charge allowed for the call in the **Maximum Charge** field.

   b. Click **Add Next** to display the **Discount Period 1** field, and type in the discount percentage for this period.

   Note: When editing, all the discount percentages currently configured in the node will be shown.

   c. To add a discount percentage for the next period, repeat step 5 (you may specify discount percentages for up to ten periods).

   d. To remove the discount percentage for the most recent discount period, click **Remove Last**.

   e. Click **Save** to complete this procedure.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Set Tariff Plan Rule

Specifies the tariff plan to be used for combinations of network access type and bearer capability.

When the Set Tariff Plan Rule node is activated during a call, the settings configured in the node are retrieved from the call plan data. When the call passes through the next UATB node, these settings are used to determine which tariff plan should be used for the caller's current network access type and bearer capability. If the tariff plan changes, then the notification configured in the node for network access type and bearer capability combination will be sent.

Node exits – Set Tariff Plan Rule

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure, or the domain being used does not support this feature node.
2	Success	The product type tariff plan has been successfully overridden by the one specified in the node.

Configuration fields – Set Tariff Plan Rule

This table describes the function of each field.

Field	Description
Access Network	List of available access network types. These are defined in Access Network geography set in ACS. **Note:** The "None" value is used for rules where the access network type is not relevant.
Bearer Type	List of available bearer types. Valid values are 1 to 255 and "None". **Note:** The "None" value is used for rules where the bearer type is not relevant.
Tariff Plan	Sets the tariff plan for the selected access network type and bearer type combination.
Notification Application	List of applications defined in ACS under which the available notification messages are grouped.
Notification Message	Lists the available notification messages for the selected notification application.

For more information about the notifications and geography sets configured in ACS, see *ACS User's Guide*.

Configuring the node – Set Tariff Plan Rule

Follow these steps to configure the node.

1. From the **Access Network** drop down list, select the access network for the rule you are adding.
2. From the **Bearer Type** drop down list, select the bearer type for the rule.
3. From the **Tariff Plan** drop down list, select the tariff plan to use for this combination of access network type and bearer type.
4. From the **Notification App** drop down list, select the application for which the notification message you want to use has been configured in ACS.
5. From the **Notification Message** drop down list, select the message to output for this rule.
6. Click **Add**.

   Result: The rule is added to the grid.
7. Repeat step 1 to 6 for all the combinations of access network type and bearer type you require.

   Modify any existing rules as required. To

   - update a rule, highlight it in the grid. Use the selection boxes to change its values, and click **Update**.
   - delete a rule, highlight it in the grid and click **Delete**.
8. Click **Save**.

Set Wallet Type

The Set Wallet Type node specifies the wallet type to use in the call context. Currently, one of:

- Primary
- Secondary

Node exits – Set Wallet Type

This node has one entry point and two exits that are set by the system. The number of exits is not changeable by the user.

Exit	Cause	Description
1	Success	The caller has successfully exited the node and the desired wallet type has been set.

Exit	Cause	Description
2	Unsupported	One of the following: • An error or failure occurred. • The domain being used does not support this feature node. • The caller does not have a business wallet but the BusinessWallet configuration option has been ticked.

Configuration fields – Set Wallet Type

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.
UseSecondaryWallet	Select this check box to use the secondary wallet for billing.

Configuring the node – Set Wallet Type

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. Select the **UseSecondaryWallet** check box to use the secondary wallet.
3. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

Tariff Plan Override

The Tariff Plan Override node overrides the configured tariff plan with the tariff plan specified in the node. Optionally the tariff plan can be selected from a profile field.

The override only applies to the next UATB node in the control plan.

Node exits – Tariff Plan Override

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the domain being used does not support this feature node.
2	Success	The product type tariff plan has been successfully overridden by the one specified in the node.

Configuring the node – Tariff Plan Override

Follow these steps to configure the node.

1. In the **Tariff Plan Override Source** area select one of the following:
   - **From Profile**
   - **Manual Definition**
2. Select the tariff plan to use instead of the one configured for the product type, for the next IRR or CRR action. If you selected:
   - **From Profile:** Select from the **Data Type**, **Location** and **Field** drop down lists the profile field containing the tariff plan you want to use.
   - **Manual Definition:** Select from the **Tariff Plan** drop down list.
3. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Universal ATB

The Universal Attempt Termination with Billing (UATB) node is used to bill subscribers for calls that they make or receive. Billing is done following the tariff plan assigned to the subscriber's product type.

The UATB node can be used in either an originating or a terminating control plan with one of the following switch types:

- CS1 switch (the VSSP is required to translate from CS1 to CAMEL for UATB to operate)
- Nokia switch
- CAMEL Phase 2 switch
- CAMEL Phase 3 switch

The switch type is determined by extracting the ‘Application Context’ parameter from the TCAP primitive and will follow the correct charging flow accordingly.

A pre-call announcement may be played by setting the `PreCallAnnouncementId` parameter (in **eserv.config** file) to a valid announcement ID. For more information about this parameter, see *CCS Technical Guide* topic *ccsSvcLibrary*.

The UATB feature node checks if a control plan trigger has been armed after each billing engine action is performed. If a control plan trigger has been armed the UATB feature node will fetch the required trigger details for the call capability/product type and invoke the new control plan trigger chassis action, passing in the trigger detail.

The duration of a call can be limited by determining a value for the Maximum Permitted Call Duration profile tag. If a value is included in the Max Permitted Call Duration profile tag, that value will determine the maximum duration of a call, and will be used to overwrite the corresponding value in the InitialTimeReservationResponse.

Note: If a Max Permitted Call Duration value is not set in the profile tag, no limit on call duration will occur.

Note: The Max Permitted Call Duration profile can be set using the Set feature node prior to the UATB feature node in your control plan.

A grace period can be used to configure whether a call is allowed to continue for the specified number of seconds on communication or system errors for subsequent reservations. If a value is included in the GracePeriodLength profile tag, that value will determine the grace period of a call. If the GracePeriodLength profile tag is set, its value will be used to overwrite the value set the BFTGracePeriodLength parameter in the ccsMacroNodes section in **eserv.config**. It can also be set using the Set feature node prior to the UATB node.

Node exits – Universal ATB

This node has one entry and 14 exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS Voucher and Wallet Server. For specific information about how responses from other Voucher and Wallet Servers map to these exits, see the technical guide for the interface for Voucher and Wallet Server being used.

Exit	Cause	Description
1	Declined (No Funds)	Exit taken for one of the following: • Insufficient balance found to satisfy even the initial reservation request • Max-concurrent reached for the subscriber's wallet • Restricted rating • Blocked destination • Invalid wallet state (that is: frozen, suspended or terminated).

Exit	Cause	Description
2	BFT	Exit taken for one of the following: • Could not talk to the Voucher and Wallet Server due to one of the following: – Could not contact billing engine client – Voucher and Wallet Server is busy – Various internal "no dialog" type errors • Could not charge for call, • Unknown account/wallet
3	BFT (Released)	Exit taken for one of the following: • Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server) • 'BFT grace period length' is set (that is, BFT grace period length is greater than '0') Call will be released and call processing will no longer be permitted.
4	BFT (Disconnected)	Exit taken for one of the following: • Calling number has run out of funds during the call (subsequent reservation has failed due to a system error or through failing to contact the Voucher and Wallet Server) • 'BFT grace period length' is set (that is, BFT grace period length is greater than '0') Called number (leg 2) will be disconnected and call processing will still be possible. **Warning:** Not supported for the Nokia switch.

Exit	Cause	Description
5	NSF (Released)	Exit taken when calling number has run out of funds during the call. Call will be released and call processing will no longer be permitted.
6	NSF (Disconnected)	Exit taken when calling number has run out of funds during the call. Called number (leg 2) will be disconnected and call processing will still be possible. **Warning:** Not supported for the Nokia switch.
7	Free Call (Released)	Exit taken when: • 'free call' indicator flag is set in the Apply Charging Report • 'free call disposition' set in the initial reservation response is 'free call release' Call will immediately be released when the Apply Charging Report is received. **Warning:** Not supported for the Nokia switch.
8	Abort	Exit taken when: • TCAP Abort as indicated in the event type Event Report BCSM returned from the switch • TCAP Abandon as indicated in the event type Event Report BCSM returned from the switch • 'abort' flag is set by ACS in the response to the Apply Charging returned to the Universal ATB • Processing error during the call which cannot be classified elsewhere
9	Route Select Failure	TCAP Route Select Failure as indicated in the event type in the Event Report BCSM returned from the switch. **Warning:** Not supported for the Nokia switch.
10	Busy	Called number is busy as indicated in the event type in the Event Report BCSM returned from the switch.

Exit	Cause	Description
11	No Answer	Called party failed to answer as indicated in the event type in the Event Report BCSM returned from the switch.
12	Disconnect (Calling)	Calling party has disconnected as indicated in the event type in the Event Report BCSM returned from the switch.
13	Disconnect (Called)	Called party has disconnected as indicated in the event type in the Event Report BCSM returned from the switch. **Warning:** Not supported for the Nokia switch.
14	Unsupported	Either: • an unexpected error or failure, or • the Domain being used does not support this feature node.
15	NSF	When Subscriber's wallet does not have enough credit to support a subsequent reservation and the VWS rejects the reservation request with NSF (Not Sufficient Funds). Call can be routed to another node e.g. SET Node where a redirection address can be set before returning to UATB node to continue call processing.
16	Continue	Successful reservation, but allows additional call processing by another node whilst call is running. Call is then returned to UATB node to continue call processing

Note: These exit descriptions pertain to the Oracle VWS. When used with other Voucher and Wallet Servers the exit causes may differ. See the relevant technical guide for the Voucher and Wallet Server being used.

Call end reasons – Universal ATB

This feature node provides ACS callEndReasons on issuing a FinaliseCall action, prior to taking one of the exits. This table lists the callEndReasons.

callEndReasons	Value	Description
reasonNotSet	0	Not set (default)

callEndReasons	Value	Description
precallAnnouncementFailure	1	Issued when a precall announcement cannot be played, whether due to abandonment, or other error conditions.
firstEventACRAbort	2	Issued when an abort occurs when ACR is received before event report.
firstEventATAbort	3	Issued when an abort occurs due to an AT (Attempt Terminate) which is caused by sending either a `connect` or a `continue` to the switch. **Note:** This value is currently not set, and is reserved for future use.
secondEventACRAbort	4	Issued when an abort occurs following receipt of an event report (waiting for the apply charging report).
secondEventATAbort	5	Is set (for CS1 / Nokia switches) when ACS is attempting termination and waiting for a `BCSM Event` Report. For CAMEL, it is set where an abort is received in the `ERBCSM`.
abortWaitingForBEResponse	6	Issued when an abort occurs on the main dialog while waiting for a response to the extend time reservation action.
releasedOnTCPExpiry	7	Issued when the switch releases the call on timer expiry (noted in the apply charging report).
releasedNoFunds	8	Issued where the UATB issues a release on failure to secure further funds for the call.
disconnectedLegBNoFunds	9	Issued where the UATB issues a B leg disconnect on failure to secure further funds for the call.
calledPartyBusy	10	Issued on busy.
routeSelectFailure	11	Issued on route select failure.
callingPartyAbandon	12	Issued on abandon.
noAnswer	13	Issued on no answer.
callingPartyDisconnected	14	Issued on calling party disconnected.
calledPartyDisconnected	15	Issued on called party disconnected.

Configuration fields – Universal ATB

This table describes the function of each field.

Field	Description
UseNoAnswer	Select this check box to use the No Answer Timer value.
NoAnswerTimer	This option provides a value for the No Answer Timer that is sent with a Connect message. This option is supported for all switch types.
PlayToneTimer	This option is only available for the CAMEL charging flow. When selected, a tone will be played before the caller runs out of funds.
UseRatingBuffer	Select this check box to specify the Rating Prefix Buffer.
RatingPrefixBuffer	Sets the destination prefix buffer to use for rating. When UseRatingBuffer is not selected, the default Pending Termination Number buffer is used.

Configuring the node – Universal ATB

Follow these steps to configure the node.

1. If required select the **UseNoAnswer** check box and then enter a value, in seconds, in the **NoAnswerTimer(sec)** field.
2. If required select the **PlayToneTimer** check box.
3. If required select the **UseRatingBuffer** check box and then select destination prefix buffer to use for rating from the **RatingPrefixBuffer** drop down list.
4. Click **Save**.

Note: Additional configuration is available in **eserv.config**. For more information, see *CCS Technical Guide*, `ccsSvcLibrary` and `ccsMacroNodes`.

Variable Amount Recharge

The Variable Amount Recharge node will attempt a standard recharge for the specified wallet based on the voucher and wallet data derived from profile fields.

The feature node will combine the following recharge details and invoke the WalletDelegation chassis action:

- Recharge entries (containing balance, recharge amount information)
- Wallet expiry extension policy
- Wallet expiry extension period
- Voucher specified by the voucher type name (if supplied and configured)

Node exits – Variable Amount Recharge

This node has one entry and eight exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The variable recharge data was found and applied successfully.
2	No Balances	No balance information is specified in Recharge List. Recharge action is skipped.
3	Invalid Wallet Type	Specified wallet type is invalid/ not recognized by the billing engine.
4	Wallet Not Found	The wallet does not exist upon the charging domain.
5	Wallet Non-rchrgble	The wallet cannot be recharged as it is in an inappropriate state (for example: pre-use, frozen, suspended or terminated), or a balance is not rechargeable (for example: single use balance type).
6	Invalid Recharge Val	Recharge attempt was unsuccessful due to Bad PIN.
7	System Error	A general system error occurred.
8	Communicate Error	A communication error occurred (usually meaning unable to communicate with the billing engine).

Configuring the node – Variable Amount Recharge

Follow these steps to configure the node.

1. In the Recharge List area, select a profile location from the **RechargeData Type**, **Recharge Location** and **Recharge Field** drop down lists.

   The Recharge List profile field stores a list of recharge entries, each containing the following sub profile fields and tags:

   - Balance Type Name
   - Recharge Amount
   - Balance Expiry Extension Period (optional)
   - Balance Expiry Extension Policy (optional)
   - Bucket Creation Policy (optional)

2. Optionally, select the balance type override from the **Override Type** drop down list to overwrite the balance specified in the Recharge List.

3. Select the Wallet Expiry Extension Policy profile from the **Expiry Policy Data Type**, **Expiry Policy Location** and **Expiry Policy Field** drop down lists.

   This profile indicates the policy used in determining the expiry date for the wallet.

4. Select the Wallet Expiry Period profile from the **Expiry Period Data Type**, **Expiry Period Location** and **Expiry Period Field** drop down lists.

   This profile indicates the period used to determine the new expiry date for the wallet.

5. In the Select Voucher Type area, choose the source of voucher information as either:
   - **From Node**
   - **From Profile**

6. Depending on the above selection, appropriate fields are enabled in the Voucher Type area.
   - Select a voucher profile location from **Data Type**, **Location** and **Field** drop down lists, or
   - Select a voucher node from **Data Type**, **Type from node** drop down lists.

7. Select the Wallet Type profile from the **Wallet Type Name Data Type**, **Wallet Type Name Location** and **Wallet Type Name Field** drop down lists.

   This profile contains the wallet that will be recharged at the end of the transaction.

Note: The items in the drop down lists are all managed via the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs.

Voice Call Cost

The Voice Call Cost node plays the cost of the last call within the current control plan.

Node exits – Voice Call Cost

This node has one entry point and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	All information has been played successfully.
2	Abandon	The caller has abandoned the call.
3	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Voice Call Cost

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Voice Call Cost

Follow these steps to configure the node

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

32
Credit Card Nodes

This chapter describes the CCS credit card feature nodes.

This chapter contains the following topics.

Create and Register Credit Card

Credit Card State Branching

Credit Cards Per Subscriber Branching

Delete Credit Card Details

Deregister Credit Card

Modify Credit Card Details

Retrieve Credit Cards for Subscriber

Subscribers Per Credit Card Branching

Create and Register Credit Card

The Create & Register Credit Card feature node links a specified subscriber (or if the token identifier is already in the database, then the current logical subscriber) to a credit card.

When the option in the **Action** frame is set to:

- **New In Frozen State**, the feature node will not search for a subscriber record; it will only search for a credit card record.
- **Register**, the feature node searches the SCP database (through a cache) for an existing registration between the specified subscriber and the specified credit card record using the tokenized number as a search key.

If no credit card record is found for the tokenized number, the feature node applies the masking rule specified to the full credit card number, resulting with a display number split into prefix and suffix that is sent to the SMS with the remaining parameters.

The display prefix and display suffix fields are encrypted by a local database function before being sent to the SMS in the replication request.

Node exits – Create and Register Credit Card

This node has one entry and ten exits. The number of exits cannot be changed.

Exit	Name	Cause
1	1st Reg to New CC	No credit card record for the given tokenized number was found, and the action field is set to **Register** (Create if required).

Exit	Name	Cause
2	1st Reg Activated CC	No subscriber registration records were found (but the credit card record is present and the state is **Frozen**) and the action field is set to **Register** (Create if required).
3	Secondary Reg Added	A matching subscriber registration record is not found (but the credit card record is present and the state is **Active**) and the action field is set to **Register** (Create if required) and the **Confirm Secondary Registration** flag has been set.
4	Pending Reg Added	A matching subscriber registration record was not found (but the credit card record is present and the state is **Active**) and the action field is set to **Register** (Create if required) and the **Confirm Secondary Registration** flag has not been set.
5	Frozen CC Created	No credit card record for the given tokenized number was found, and the action field is set to **Create in Frozen state**.
6	Already Registered	A matching subscriber registration record for the credit card exists.
7	CC in Frozen State	The action field has been set to **Create in Frozen state** and an existing credit card record is found which is either in the **Active** state or has the **Frozen flag** set. **Note:** For Active states, this will allow the operator to use the **Modify CC** feature node to set the state to **Frozen** on the existing credit card record.
8	CC in Deleted State	The credit card record is in the **Deleted** state.
9	CC in Active State	A matching subscriber registration record is found.

Exit	Name	Cause
10	Error	Any of the following: • One of the required parameters is not present (such as Expiry Date). • No subscriber registration records were found (but the Credit Card record is present) and either of the **subscribers per credit card** or the **credits cards per subscriber** limits has already been reached. • The tokenized number is longer than 256 characters.

Node fields – Create and Register Credit Card

This table describes the function of each field.

Field	Description
Action	The initial state for the credit card. **Register** • No credit card record found - new record created as Active state and registered to the subscriber as Primary card. • Credit card record found, but no subscriber registration record found. – For Frozen states, register as Primary. – For Active states and Confirm Secondary Registration set, register as Secondary. – For Active states and Confirm Secondary Registration not set, register as Pending. **New Frozen State** No credit card found - new record is created as Frozen state. (Default is Register).
Credit Card Number Source	The profile field containing the full credit card number (optional, but mandatory for new credit cards).
Tokenised Credit Card Number Source	The profile field containing the tokenized credit card number (mandatory).
Subscriber ID Source	The profile field containing the subscriber number (optional).
Expiry Data Source	The profile field containing the credit card expiry date (optional, but mandatory for new credit cards).
Card Holder Source	The profile field containing the name on the credit card (optional, but mandatory for new credit cards).

Field	Description
Masking Rule	The profile field or list containing the credit card masking rule (optional, but mandatory for new credit cards).
Secondary Registration	A flag to indicate the credit card is a pending or secondary registration (default is unset - pending). Select for a secondary registration and leave clear for a Pending registration
Service Provider ID Source	The profile field containing the ACS Customer identity.

Configuring the node – Create and Register Credit Card

Follow these steps to configure the Create & Register Credit Card feature node.

1. Select the required **Action** option. The options are:
   - Register
   - New Frozen State
2. Select from the **Data Type**, **Location** and **Field** drop down lists to set the following data locations:
   - Credit Card Number Source
   - Tokenised Credit Card Number Source
   - Subscriber ID Source
   - Expiry Data Source
   - Card Holder Name Source
   - Service Provider ID Source
3. Select the **Masking Rule** option:
   - From profile - then select from the **Data Type**, **Location** and **Field** drop down lists
   - From node - then select from the **Name** drop down list.
4. Confirm the registration as one of the following:
   - Secondary (select the **Confirm on Create** check box)
   - Pending (ensure **Confirm on Create** check box is not selected).
5. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Credit Card State Branching

The Credit Card State Branching feature node enables control plan flow logic depending on the status of a specified credit card.

The feature node will read the SCP database (through a cache) and check the specified credit card record using the tokenized number as a search key.

Node exits – Credit Card State Branching

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Active	The credit card record is in the **Active** state.
2	Frozen	The credit card record is in the **Frozen** state.
3	Unknown CC	No credit card record was found for the specified tokenized number.
4	Deleted	The credit card record is in the **Deleted** state.
5	Error	A general error has occurred.

Configuring the node – Credit Card State Branching

Follow these steps to configure the node.

1. Select from the **Data Type**, **Location** and **Field** profile field drop down lists to set the Tokenised Credit Card Number Source data location.
2. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Credit Cards Per Subscriber Branching

The Credit Cards Per Subscriber Branching feature node enables control plan flow logic based on the number of credit cards associated with a specified subscriber.

The feature node will search the SCP database (through a cache) to look for credit card registrations for the selected subscriber.

The search results will include credit card records in either the active or frozen state, but exclude those in the deleted state.

The subscriber registration state field will be ignored, therefore pending registrations will be included in the number of records found.

The feature node compares the number of returned records with the credit cards per subscriber limit, which is read from either the customer profile or the CCS global profile (in that order).

Node exits – Credit Cards Per Subscriber Branching

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Name	Cause
1	None Registered	No credit card records were found.
2	One Registered	One credit card record is found and the credit cards per subscriber limit is greater than one.
3	Limit Not Reached	The number of credit card records found (including pending registrations) is less than the configured credit cards per subscriber limit.
4	Limit Reached	The number of credit card records found (including pending registrations) is greater than or equal to the credit cards per subscriber limit.
5	Error	A credit cards per subscriber limit could not be found.

Configuring the node – Credit Cards Per Subscriber Branching

Follow these steps to configure the node.

1. Select from the **Data Type**, **Location** and **Field** profile field drop down lists to set the Subscriber ID Source data location.
2. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Delete Credit Card Details

The Delete Credit Card Details feature node enables the credit card record and the associated subscriber registration to be removed from the database.

Note: If the state of the credit card is frozen, the state is changed to deleted and no records are removed.

The feature node searches the SCP database (through a cache) for the specified credit card record using the tokenized number as a search key.

Node exits – Delete Credit Card Details

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Deleted	The Credit Card record is in either the **Active** or **Frozen** state.

Exit	Name	Cause
2	CC Already Deleted	The Credit Card record is already in the **Deleted** state.
3	Unknown CC	No Credit Card records have been found.
4	Error	A general error occurred.

Configuring the node – Delete Credit Card Details

Follow these steps to configure the node.

1. Select from the **Data Type**, **Location** and **Field** profile field drop down lists to set the Tokenised Credit Card Number Source data location.
2. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Deregister Credit Card

The Degregister Credit Card feature node removes the link between the credit card and the specified subscriber.

The feature node searches the SCP database (through a cache) for a matching credit card record (using the tokenized number as a search key) and a registration to the specified subscriber.

Primary registration states cannot be removed by this feature node. The credit card can be removed by using the Delete Credit Card Details feature node. The primary registration may be changed using the CCS screens (**SMS > Services > Prepaid Charging > Subscriber Management > Credit Cards**) or a PI command (see *PI Commands (CCS) Operations Guide*).

Node exits – Deregister Credit Card

his node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Deregistered	A registration record is found and the registration state is Secondary or Pending.
2	No Pri Dereg Allowed	A registration record is found and the registration state is Primary.
3	CC in Deleted State	A credit card record is found with the Deleted state.
4	Not Registered	A credit card record is found but no registration can be found.
5	Unknown CC	No credit card record can be found.

Exit	Cause	Description
6	Error	A general error has occurred.

Configuring the node – Deregister Credit Card

Follow these steps to configure the node.

1. Select from the **Data Type**, **Location** and **Field** profile field drop down lists to set the following data locations:
   - Subscriber Source
   - Tokenised Credit Card Number Source
2. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Modify Credit Card Details

The Modify Credit Card Details feature node enables a credit card to be modified.

The feature node searches the SCP database (through a cache) for an existing credit card record with the specified current tokenized number.

The modification type selection drives what is changed:

- **Activate** - Changes the credit card state from frozen to active.
- **Confirm** - Changes the selected subscriber registration state from pending to secondary.
- **Expiry Date** - Changes the credit card expiry date (the expiry date and new tokenized number fields are only available with this option).
- **Freeze** - Changes the credit card state from active to frozen.

Node exits – Modify Credit Card Details

This node has one entry and eight exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	This branch taken for any of these conditions: • The modification type is Confirm and the subscriber registration record is found with a registration state of Pending. • The modification type is Activate and the credit card record is found with the state of Frozen. • The modification type is Freeze and the credit card record is found with the state of Active. • The modification type is Expiry Date and both the required information and credit card record are found.
2	CC Already Active	This branch taken when the modification type is Activate and the retrieved credit card state is Active.
3	CC Already Frozen	This branch taken when the modification type is Freeze and the retrieved credit card state is Frozen.
4	Unknown CC	This branch taken when an existing credit card record with the specified current tokenized number could not be found.
5	Reg Not Pending	This branch taken when the modification type is Confirm and a subscriber registration record is found with a registration state of Primary or Secondary.
6	Subscriber Not Regd	This branch taken when the modification type is Confirm and no subscriber registration record is found.
7	CC in Deleted State	This branch taken when the found credit card record is in the Deleted state.

Exit	Cause	Description
8	Error	This branch taken for any of these conditions: • The new tokenized number is longer than 256 characters. • The modification type is Expiry Date and the expiry date or new tokenized number have not been provided. • The modification type is Expiry Date and no records are found. • The modification type is Activate and no records are found. • The modification type is Confirm and the credit card record has a state of Frozen.

Configuring the node – Modify Credit Card Details

Follow these steps to configure the node.

1. Select the required **Modification Type** option, one of:
   - Activate
   - Confirm
   - Expiry Date
   - Freeze

   Note: The available profile field selections are made available according to this selection.
2. Select from the available profile field **Data Type**, **Location** and **Field** drop down lists to set the following data locations:
   - Current Tokenised Credit Card Number Source
   - New Tokenised Credit Card Number Source
   - Subscriber ID Source
   - Expiry Date Source
3. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Retrieve Credit Cards for Subscriber

The Retrieve Credit Cards for Subscriber feature node retrieves details for all the credit cards for the subscriber specified in the feature node configuration.

The feature node searches for credit card records in the following states:

- Active
- Frozen (Optional. By default, frozen credit cards are not retrieved)
- Primary or secondary registration
- Pending registration (Optional. By default credit cards that are pending registration are not retrieved)

The feature node retrieves the following credit card details for each credit card registered to the subscriber, and orders the results in ascending registration date order:

- Tokenized credit card number
- Credit card number suffix
- Credit card expiry date
- Credit card holder

The feature node saves the results in temporary storage to the configured profile block. You must specify a profile block, such as the CCS-CC Registered Cards profile block, that contains four sub-tags in which to store the credit card details.

Use the Open Services Development (OSD) feature node after the Retrieve Credit Card Details feature node in your control plans to copy the details for each credit card from temporary storage to the OSD profile tags.

The following table lists the profile tag details for the CCS-CC Registered Cards profile block.

Profile Tag Name	Profile Tag Type	Profile Tag ID	Parent Tag ID
CCS-CC Registered Cards	Array	1311509	NA
CS-CC Registered Tokens	Nstring	1311510	1311509
CCS-CC Registered Suffix	Nstring	1311511	1311509
CCS-CC Registered Expiry	Nstring	1311512	1311509
CCS-CC Registered Holder	Nstring	1311513	1311509

Node exits – Retrieve Credit Cards for Subscriber

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	One Registration	A single registration has been found (including if selected, those in Pending or Frozen state).
2	Many Registrations	Multiple credit card records found (including if selected, those in Pending or Frozen state).
2	No Registrations	No registration records found (including if selected, those in Pending or Frozen state).
4	Error	If the destination profile block type is not array, or it does not have four nstring type sub-tags, then the error branch is taken.

Configuring the node – Retrieve Credit Cards for Subscriber

Follow these steps to configure the Retrieve Credit Cards for Subscriber feature node.

1. Select the **Include** options as required:
   - To include credit cards that are still pending registration, select the **Pending Registration** check box. Credit cards that are pending registration are excluded by default.
   - To include credit cards that are frozen, select the **Frozen Credit Card** check box. Frozen credit cards are excluded by default.
2. Select from the profile field **Data Type**, **Location** and **Field** lists to set the following data locations:
   - Subscriber ID Source
   - Credit Card Information Target. You must select an array type profile block that contains four nstring sub-tags, such as the `CCS-CC Registered Cards` temporary storage profile block that is installed when you install NCC.
3. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

Subscribers Per Credit Card Branching

The Subscribers Per Credit Card Branching feature node enables control plan flow logic depending on the number of subscribers associated with a specified credit card.

The feature node searches the SCP database (through a cache) to look for subscriber registrations for the specified credit card record using the tokenized number as a search key.

The search results include all records in the pending, frozen or active states.

The subscribers per credit card limit is read from either the customer profile or the CCS global profile (in that order).

Node exits – Subscribers Per Credit Card Branching

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Name	Cause
1	No Registrations	No subscribers registered to the credit card.
2	Limit Not Reached	The configured limit of subscribers registered (including pending registration) to this credit card not yet reached.
3	Limit Reached	The number of subscribers registered (including pending registration) to this credit card is equal to or more than the configured limit.
4	Unknown CC	No records found for the credit card.
5	CC in Deleted State	The credit card is in the Delete state.
6	Error	No limit value found for the subscribers per credit card limit.

Configuring the node – Subscribers Per Credit Card Branching

Follow these steps to configure the node.

1. Select from the profile field **Data Type**, **Location** and **Field** drop down lists to set the Tokenised Credit Card Number Source data location.
2. Click **Save**.

Note: The available profile fields are managed using the **SMS > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs. For more information, see *Advanced Control Services User's Guide*.

33
CCS Subscriber Feature Nodes

This hapter describes the Oracle Communications Network Charging and Control (NCC) CCS Subscriber feature nodes.

This chapter contains the following topics.

Change PIN

Credit Card Details Change

Credit Card Recharge Menu

Credit Card Secret Code Change

Credit Card Starter Menu

Do Credit Card Recharge

Friends and Destination Configuration

Friends and Destination Discount

Friends and Destination Menu

Friends and Family Configuration

Get Destination Prefix

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Main Menu

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Play Destination

Product Type Branching

Product Type Swap

Read Secret Code

Refresh Subscriber Information

Remote Access Service

Select Language

Set Product Type

Subscriber Creation/ Deletion

What's New

Change PIN

Prompts the user to enter digits to change their PIN.

Node exits – Change PIN

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The subscriber's PIN was successfully changed.
2	Unsupported	Any condition, error, failure that occurred, not covered by the other three exits.
3	Abandon	The subscriber hung up before the PIN was changed,
4	Escape	The subscriber pressed the Escape key.

Configuration fields – Change PIN

This table describes the function of each field.

Field	Description
First PIN Prompt	This is the announcement to play that requests the subscribers to enter their new PIN.
Timeout	This is the announcement to play when the subscriber has not responded in the configured amount of time. **Note:** The timeout time is different between the first digit and the rest of the digits, defined by the **acs.conf** parameters `FirstDigitTimeout` and `InterDigitTimeout`. See *ACS Technical Guide*.
PIN Too Long	This is the announcement to play when the entered PIN contained too many digits. **Note:** This is un-configurable and set at ten digits.
PIN Too Short	This is the announcement to play when the entered PIN contained too few digits. **Note:** This is un-configurable and set at four digits.

Field	Description
Max Retries Exceeded	This is the announcement to play when the subscriber has had more than the configured number of attempts to change their PIN. **Note:** The number of retries is defined by the **eserv.config** parameter `MaximumMenuRetries`. See *CCS Technical Guide*.
Second PIN Prompt	This is the announcement to play that requests the subscribers to enter their new PIN again for confirmation.
PIN Mismatch	This is the announcement to play when the second PIN entry is not the same as the first PIN entry.

Configuring the node – Change PIN

Follow these steps to configure the node.

1. From the **First PIN Prompt** drop down lists, select the announcement requesting the new PIN.
2. From the **Timeout** drop down lists, select the announcement to use when the subscriber has failed to respond.
3. From the **PIN Too Long** drop down lists, select the announcement to use when the entered PIN has too many digits.
4. From the **PIN Too Short** drop down lists, select the announcement to use when the entered PIN has too few digits.
5. From the **Max Retries Exceeded** drop down lists, select the announcement to use when the subscriber has run out of attempts to change their PIN.
6. From the **Second PIN Prompt** drop down lists, select the announcement requesting the new PIN again for confirmation.
7. From the **PIN Mismatch** drop down lists, select the announcement to use when the entered PIN values are not the same.
8. Click **Save**.

Credit Card Details Change

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Details Change feature node allows the user to enter a new expiry date for their Credit Card.

1. The user is prompted to enter the Credit Card Number.
2. If the number is valid, the user is prompted for a new Expiry date.
3. If the date is valid, the user is prompted to confirm the expiry date and the account record is updated.

If the customer exceeds the number of allowed invalid entries (as defined in the **asc.conf**. Refer to *ACS Technical Guide* for further information) the account will be frozen.

Node exits – Credit Card Details Change

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure, the Domain being used does not support this feature node, or no selection has been made.
2	Success	The credit card details have been changed successfully.
3	Abandon	The caller has abandoned the call.
4	Escape	The caller has selected the Escape option.
5	Frozen	The account has been frozen.

Configuration fields – Credit Card Details Change

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Credit Card Details Change

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

Credit Card Recharge Menu

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Recharge Menu feature node allows the user access to the Credit Card Recharge facility, and to change their Credit Card Recharge details. The feature node allows the user:

- Access to the Credit Card Recharge facility
- To change their Credit Card Recharge details

For security, all Credit Card details are stored in the system and a PIN is used to access the recharge node.

Node exits – Credit Card Recharge Menu

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not made a menu selection.
2	Abandon	The caller has abandoned the call.
3	Escape	The caller has selected the Escape option.
4	Recharge	The caller has selected the Recharge option.
5	Change Code	The caller has selected the Change PIN option.
6	Change Details	The caller has selected the Change Credit Card Details option.

Configuration fields – Credit Card Recharge Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Credit Card Recharge Menu

Follow these steps to configure the node.

1. For **each** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcements have been selected.

Credit Card Secret Code Change

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Secret Code Change feature node allows the user to enter a new Credit Card PIN. User security access should be verified before this node is reached. On successfully entering the PIN, the account record is updated.

Node exits – Credit Card Secret Code Change

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The credit card PIN details have been changed successfully.
2	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not selected an entry.
3	Abandon	The caller has abandoned the call.
4	Escape	The caller has selected the Escape option.

Configuration fields – Credit Card Secret Code Change

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncement	Allows the selected announcements to be played.

Configuring the node – Credit Card Secret Code Change

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **Enable Announcement** check box as required to enable the Play Re-enter Code Announcement.

3. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Credit Card Starter Menu

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Credit Card Starter Menu feature node collects a security PIN from the user for identity verification when the user attempts credit card recharges on their account. The node first verifies the user by asking them to enter their credit card number and expiry, then checks to see if the values entered match the values stored in the system.

Node exits – Credit Card Starter Menu

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.
2	Success	The credit card PIN details have been stored.
3	Abandon	The caller has abandoned the call.
4	Escape	The caller has selected the Escape option.
5	Frozen	The caller's account status is Frozen, and they are therefore forbidden to use this node.
6	No CC Details	No credit card details exist for this caller, and they are therefore forbidden to use this node.

Configuring the node – Credit Card Starter Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Do Credit Card Recharge

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Do Credit Card Recharge feature node allows the user to recharge an account using a credit card. There are nine possible recharge options, which may be configured in any combination and played as a single menu. The caller may then recharge the account using the selected option.

The feature node will filter out all expenditure balance types and not include then in the played message. See *CCS User's Guide - Balance Types* topic.

Node exits – Do Credit Card Recharge

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The account has been successfully recharged.
2	Escape	The caller has selected the Escape option.
3	Abandon	The caller has abandoned the call.
4	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not chosen an option from the menu.

Configuration fields – Do Credit Card Recharge

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncement	Allows the selected announcements to be played.

Configuring the node – Do Credit Card Recharge

Follow these steps to edit the node configuration.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Select the **Enable Announcement** check boxes as required to enable the Play Title Announcement and Play Confirm Change Announcement.
3. Click **Save**.

Note: This will be grayed out until all the announcement sets have been selected.

Note: The caller has three chances to press an invalid key, or to let the menu timeout, before the Abandon exit branch is taken. If the caller presses the * key, the call is routed down the Escape branch.

Further reference:

The credit card recharge rules applying to this node, are defined in the Prepaid Charging, Subscriber Management, Product Type window. For more information, see *CCS User's Guide*.

Friends and Destination Configuration

Friends, Family and Destination Discount module

The Friends, Family and Destination Discount module seeks to apply a configured discount to calls made to numbers defined in a list, of up to 10 entries, for a particular account when made from an MSISDN associated with that account.

The discount percentage is the cumulative amount which is to be discounted in total for Friends and Family numbers.

The only time in which an individual call is discounted by the amount configured for the Friends and Family product associated with an account is when that account has only one Friends and Family number configured.

Friends and Destination discounting occurs either for a single number prefix or for a group of prefixes, depending on how the Friends/Destination Discount feature node is configured:

- If Multi-Destinations is selected, then the percentage discount is applied to calls where the call prefix belongs to the same group as the discount prefix defined in this node (prefixes belong to the same group if they share the same announcement).
- If Multi-Destinations is not selected, then the discount applies only to calls with the specified discount prefix.

Note: Only dialed numbers which exactly match the configured Friends and Family numbers will be discounted.

Node description - Friends and Destination Configuration

The Friends and Destination Configuration node enables the caller to maintain their friends and destination discount prefix. The node prompts the caller to select one of the following options:

Key	Function	Description
1	Add/Change Prefix	If no prefix has been previously defined for this subscriber, or enter a new prefix for discount calls.

Key	Function	Description
2	Delete Prefix	Remove any existing prefix.
9	Activate Service	Enables the Friends and Destination discount service.

Note: The subscriber can have either the Friends and Family *or* the Friends and Destination service active. Activating the Friends and Destination service will mean that the Friends and Family service will no longer be in use.

Node exits – Friends and Destination Configuration

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Main Menu	The caller has selected the Main Menu option.
2	User Hang-up	The caller has abandoned the call.
3	Disconnect	The caller has entered too many invalid entries or has not made a selection from the menu.
4	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has selected the Escape option.

Configuration fields – Friends and Destination Configuration

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
MaxInvalidDigits	The maximum number of invalid entries allowed.
AnnouncementTimeout	The timeout used for standard prompt announcements.
ListCyclingTimeout	The timeouts used during list cycling.
ListStartTimeout	The timeouts used during list start.
SendChargeSMS	Send SMS text message with change detail and cost.
Event Class	List of event types that can be billed.
Named Event	List of events for the event class selected.

Configuring the node – Friends and Destination Configuration

Follow these steps to configure the node.

1. For *each relevant* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. Enter the maximum number of retries allowed for entering digits in the **MaxInvalidDigit** field.
3. Type the timeout period in seconds for all prompt and collect messages in the **AnnouncementTimeout** field.
4. Select the **SendChargeSMS** check box if the amount charged is to be sent to the caller.
5. Select the **Event Class** to use from the drop down list.
6. Select the **Named Event** to use from the drop down list.
7. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

Friends and Destination Discount

The Friends and Destination Discount node enables the Friends and Family / Friends and Destination service to apply the discount for that service as configured for the product type in use. The node is placed before any UATB node to set the required discount percentage for the call.

Node exits – Friends and Destination Discount

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The caller has successfully exited the node and the correct discount override will be used.
2	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
3	No Discount	The caller has not qualified for a Friends and Family / Friends and Destination discount. No discount will be applied to the call.

Configuration fields – Friends and Destination Discount

This table describes the function of each field.

Field	Description
Multi-Destinations	Determines whether the discount is applied to a single number prefix or to a group of prefixes. When selected, the discount is applied to all calls where the call prefix belongs to the same group as the discount prefix defined for the caller.

Note: Prefixes are grouped by announcement (prefixes that share the same announcement belong to the same group). You can use this facility to map prefixes by region.

Configuring the node – Friends and Destination Discount

Follow these steps to configure the node.

1. If required, tick the **Multi_Destinations** check box.
2. Click **Save**.

Friends and Destination Menu

The Friends and Destination Menu node informs the caller which service - if any - is currently active. The caller is then prompted to select which service they would like to maintain.

Node exits – Friends and Destination Menu

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Friends and Family	The caller has selected the Friends and Family option from the menu.
2	Friends and Destination	The caller has selected the Friends and Destination option from the menu.
3	User Hang up	The caller has abandoned the call.
4	Disconnect	The caller has entered too many invalid entries or has not made a selection from the menu.
5	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
6	Escape	The caller has selected the Escape option.

Configuration fields – Friends and Destination Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
MaxInvalidDigits	The maximum number of invalid entries allowed.
AnnTimeout	The timeout used for standard prompt announcements.

Configuring the node – Friends and Destination Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. Type the maximum number of times a caller can enter a disallowed number in the **MaxInvalidDigits** field.
3. Type the length of time in seconds after the main announcement is played before the call is disconnected in the **AnnTimeout** field.
4. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Friends and Family Configuration

The Friends and Family Configuration node enables the caller to maintain their friends and family service number list. The node plays announcements that:

- Inform the caller of how many friends and family numbers they currently have stored in their list
- Enable them to perform predefined functions using phone key pad buttons

Node exits – Friends and Family Configuration

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Main Menu	The caller has selected the Main Menu option.
2	User Hang-up	The caller has abandoned the call.

Exit	Cause	Description
3	Disconnect	The caller has entered too many invalid entries or has not made a selection from the menu.
4	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has selected the Escape option.

Configuration fields – Friends and Family Configuration

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
MaxInvalidDigits	The maximum number of invalid entries allowed.
AnnTimeout	The timeout used for standard prompt announcements.
ListCyclingTimeout	The timeouts used during list cycling.
ListStartTimeout	The timeouts used during list start.
SendChargeSMS	Send SMS text message with change detail and cost.
Event Class	List of event types that can be billed.
Named Event	List of events for the event class selected.

If the caller initiates a change or addition to the stored Friends and Family numbers list this node will bill the subscriber's account for the amount set in the Named Event panel of the Tariff screen for Friends and Family configuration changes.

Note: The subscriber can have either the Friends and Family **OR** the Friends and Destination service active. Activating the Friends and Family service will mean that the Friends and Destination service will no longer be in use.

Configuring the node – Friends and Family Configuration

Follow these steps to configure the node.

1. For *each relevant* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Type the maximum number of times a caller can enter a disallowed number in the **MaxInvalidDigits** field.

3. Type the length of time in seconds after the main announcement is played before the call is disconnected in the **AnnTimeout** field.

4. Type the length of time in seconds a list announcement is played before the call is disconnected in the **ListCyclingTimeout** field.
5. Type the length of time a list announcement is played before the call is disconnected in the **ListStartTimeout** field.
6. Select the **SendChargeSMS** check box if the amount charged is to be sent to the caller.
7. Select the **Event Class** to use from the drop down list.
8. Select the **Named Event** to use from the drop down list.
9. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

Get Destination Prefix

The Get Destination Prefix node retrieves the longest matching favourite destination prefix for a provided number.

The feature node:

- Uses the source digits to look up the friends and destination prefix map
- The longest matching friends and destination prefix is found
- The result is stored in the destination prefix profile field.

The source number will be provided in one of the following profile field types:

- Limited Number String
- Number String

The feature node will place the prefix in a profile field of type:

- Number String.

Node exits – Get Destination Prefix

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The destination prefix was found, and the announcement was played.
2	Not Found	No mappings were found for the provided number.
3	Error	One of: • Source number profile field missing • General error

Configuration fields – Get Destination Prefix

This table describes the function of each field.

Field	Description
Source Digits section	The profile **Data Type**, **Location** and **Field** for the source digits information.
Destination Prefix section	The profile **Data Type**, **Location** and **Field** for the destination prefix information.

Configuring the node – Get Destination Prefix

Follow these steps to configure the node.

1. Select the **Source Digits Data Type**, **Location** and **Field** from the drop down lists.
2. Select the **Destination Prefix Data Type**, **Location** and **Field** from the drop down lists.
3. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Help Information

The Help Information node provides an information service over the phone. The caller navigates through a menu of help topics and listens to the recorded messages on the topics of their choice.

Node exits – Help Information

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not made a menu selection.
2	Abandon	The caller has abandoned the call.
3	Success	The caller has exited the node successfully.

Configuration fields – Help Information

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Help Information

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Main Menu

The Main Menu node offers the caller a range of call options and routes the call according to the selection made.

Node exits – Main Menu

This node has one entry and eight exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Any of: • Error / failure • Domain being used does not support this feature node • Number of menu retries has exceeded the limit.
2	Abandon	The caller has abandoned the call.
3	What's New	The caller has selected the What's New option by entering key 1.
4	Account	The caller has selected the Account Status option by entering key 2.
5	Personal	The caller has selected the Personal Options option by entering key 3.
6	Recharge	The caller has selected the Recharge option by entering key 4.

Exit	Cause	Description
7	Information	The caller has selected the Information option by entering key 5.
8	Out-call	The caller has selected the Make Call option by entering key 6.

Configuration fields – Main Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Main Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.
2. Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
3. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Personal Options Menu

The Personal Options Menu node offers the caller a range of options about their profile and routes the call according to the selection made.

Node exits – Personal Options Menu

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or number of menu retries has exceeded the limit.
2	Abandon	The caller has terminated the call.
3	Escape	The caller has selected the Escape option by entering *.

Exit	Cause	Description
4	Change Language	The caller has selected the Change Language option by entering 1.
5	Maintain Fixed	The caller has selected the Maintain Fixed option by entering 2.
6	Swap Products	The caller has selected the Product Swap option by entering 3.

Configuration fields – Personal Options Menu

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Personal Options Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be grayed out until all the announcement sets have been selected.

Play Destination

The Play Destination node plays to the caller the destination announcement associated with the provided destination prefix.

The feature node:

- Uses the destination prefix to look up the destination announcement configured in friends and destination
- If the announcement is found it is then played

Node exits – Play Destination

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The destination prefix was found, and the announcement was played.
2	Not Found	The destination prefix has no matching entry in the friends and destination prefix map list.
3	Error	General errors.
4	Abandon	The user hung up during the announcement.

Configuration fields – Play Destination

This table describes the function of the field.

Field	Description
Destination Prefix section	The profile **Data Type**, **Location** and **Field** for the destination prefix information.

Configuring the node – Play Destination

Follow these steps to configure the node.

1. Select the **Destination Prefix Data Type**, **Location** and **Field** from the drop down lists.
2. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Product Type Branching

The Product Type Branching node branches depending on the comparison of the destination (called) subscriber's product type, and one of:

- A specified product type
- The product type of the subscriber loaded by the CCS service library (usually the calling party)

The basic configuration has three default branches. The node can be configured to have up to an additional twenty branches to define product type branching rules.

This functionality allows for:

- Improved/promotional rating between certain product type groups to occur (such as community calling discounts)
- Additional functionality within the control plan

Node exits – Product Type Branching

The Product Type Branching node has one entry point and 3 to 23 exit points. You can configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

Exit	Cause	Description
1	Not found	The destination subscriber's product type was not found.
2	Same	The **Use Same** check box is selected and the calling subscriber and destination subscriber's product types match. The matched branch rules are ignored. **Note:** The standard configuration for this node sets this exit as the default exit. The default branch is taken when the destination subscriber's product type does not match any branch rules. This includes situations where no matched branch rules have been configured.
3	Unsupported or Error	Wrong configuration information or general system errors such as timeout.
4 to 23	Matched	The destination subscriber's product type matched one of the branches.

Configuration fields – Product Type Branching

This table describes the function of each field.

Field	Description
All Product Types	This is the list of all the product types defined in the **Subscriber Management > Product Type** screens for the current service provider.
Branch Product Types	The branch number being configured and the product types associated with the branch.
Use Same	If selected, branch two will be taken if the calling subscriber and destination subscriber have the same product types regardless of any matching branch configuration.

Field	Description
Destination CLI	Use this buffer as the source for the CLI of the destination subscriber. The product type for this subscriber will be the one matched against. **Note:** If found, these details are written to Application Specific Profile 4 (App 4).
Destination Wallet Type Category Selection	Which wallet type to use to determine the destination subscriber's product type to be used. Primary wallet is the default and most common wallet.
Default Branch	Provides the branch to take if the destination subscriber's product type was not found in any of the branch product type rules.

Configuring the node – Product Type Branching

Follow these steps to configure the node.

1. Determine and establish the number of Product Type exits to configure (maximum of seven). See Editing node exits.
2. In the Branch Product Types area, use the Number scroll bar to select the match branch to configure.

   Result: The selected branch with any current rules appears in the panel below.
3. To remove a Product Type from the selected branch, click the Product Type and then click **<< Replace in set**.

   Result: The Product Type is removed from the branch and becomes available for adding to another branch.
4. In the All Product Types area, select a Product Type to associate with the selected branch.

   Result: If the Product Type has not been assigned to a branch, the **Move to branch >>** button becomes available.
5. Click **Move to branch >>**

   Result: The Product Type is added to the selected branch.
6. Repeat steps 3 and 4 for all the Product Types to associate with the selected branch.
7. Repeat steps 2 to 6 for all match branches.

   Note: The node can work without matching branches. The default exit will be used for all destination subscribers which have a Product Type.
8. Select which wallet type to use to determine the destination subscriber's Product Type.
9. Use the **Default Branch** scroll bar to select what branch to take if the destination subscriber's Product Type is not in the match branches.
10. Click **Save**.

Product Type Swap

The Product Type Swap node enables a subscriber to change their own product type. The Service Provider can bill or not bill for this service.

Node exits – Product Type Swap

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the domain being used does not support this feature node, or the product type change was unsuccessful.
2	Success	The product type change was successful.
3	Abandon	The caller has terminated the call.
4	Insufficient Credit	The caller has insufficient credit to complete the product type change.
5	Escape	The caller has selected the Escape option.

Configuration fields – Product Type Swap

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
Event Class	List of event types that can be billed.
Named Event	List of events for the event class selected.

Configuring the node – Product Type Swap

Follow these steps to configure the node.

1. For *each* announcement, use the drop down lists to select the prerecorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. Select the **Event Class** from the drop down list.
3. Select the **Named Event** from the drop down list.
4. Click **Save**.

   Note: This will be grayed out until all the announcements have been selected.

Read Secret Code

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans there is currently no replacement feature node.

The Read Secret Code feature node prompts the caller to enter their PIN. If the user exceeds the number of attempts allowed, the entry process will be abandoned.

Node exits – Read Secret Code

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	A valid code has been entered successfully.
2	Invalid Code	The maximum number of incorrect code attempts has been entered.
3	Frozen	The caller's account is Frozen and therefore cannot use this node.
4	Escape	The caller has selected the Escape option.
5	Abandon	The caller has abandoned the call.
6	Failure	Either, error / failure, the Domain being used does not support this feature node, or no selection has been made.

Configuration fields – Read Secret Code

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Read Secret Code

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

Note: This will be greyed out until all the announcement sets have been selected.

Refresh Subscriber Information

Some parts of the call context can become out of date while a call is being processed. The Refresh Subscriber Information node allows the stored subscriber information to be retrieved during a call to avoid out of date information being used. This node sends out one RetrieveSubscriberInformation MOX message request for new subscriber information to the billing system.

Note: This node should not be used in Billing Failure Treatment (BFT) control plans.

Node exits – Refresh Subscriber Information

This node has one entry and two exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

Exit	Cause	Description
1	Success	Subscriber information is successfully retrieved.
2	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuring the node – Refresh Subscriber Information

This node requires no configuration data. You may change the **Node name**, if required.

Remote Access Service

The Remote Access Service node enables a user to turn their Remote Access feature on or off. The announcement played to the caller depends on the state of the user's Remote Access Service feature.

Example: If Remote Access has been disabled (turned off) the announcement played will give the option of enabling (turning on).

Node exits – Remote Access Service

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Abandon	The caller has terminated the call.
2	Success	The caller has successfully exited the node.

Exit	Cause	Description
3	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
4	Escape	The caller has selected the Escape option.

Configuration fields – Remote Access Service

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Remote Access Service

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Select Language

The Select Language node allows the user to change the language in which their announcements are played. This change is made to the user's profile, and is therefore an immediate, global change.

Node exits – Select Language

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	A language has been chosen and set.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.

Exit	Cause	Description
4	Escape	The caller has selected the Escape option by entering *.

Configuration fields – Select Language

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available Announcement Sets.
Announcement Entry	List of all the announcements belonging to the selected Announcement Set.

Configuring the node – Select Language

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Set Product Type

The Set Product Type node enables a subscriber to set the product type. The Service Provider can bill or not bill for this service.

Node exits – Set Product Type

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The product type was successfully set.
2	Type Not Found	The selected product type was not found.
3	Failure	Either, error / failure, the domain being used does not support this feature node, or the product type selection was unsuccessful.

Configuring the node – Set Product Type

Follow these steps to configure the node.

1. Select the **Product Type** from the drop down list.

2. Click **Save**.

Subscriber Creation/ Deletion

This node can be used to dynamically create and delete subscribers (and wallets) from the SLC. It consists of the configuration parameters needed for subscriber creation and deletion, which it passes to the chassis action, which in turn invokes the appropriate PI command (ADD or DEL).

To create a subscriber, the following information is used:

- ACS customer
- ACS language
- Product type
- Subscriber CLI digits, saved to buffer

To delete a subscriber, the subscriber CLI digits are passed to the chassis action.

Node exits – Subscriber Creation/ Deletion

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The subscriber is successfully created or deleted depending on the selected action.
2	Failure	Either, error/failure, the Domain being used does not support this feature node, or no selection has been made. The subscriber creation or deletion operation failed.
3	Error	An error occurred when attempting to read the feature node configuration.

Configuring the node – Subscriber Creation/ Deletion

Follow these steps to edit the node configuration.

1. In the **Subsciber Creation/Deletion** frame, select the operation to be performed.

   One of:

   - **SubscriberCreation** - creates subscribers and wallets from the SLC.
   - **SubscriberDeletion** - deletes subscribers and wallets from the SLC.

2. From the **ACS Customer** drop down list, select the ACS customer to whom the control plan belongs. The subscriber will be associated with this ACS customer or telco.
3. From the **ACS Language** drop down list, select the applicable language for the new subscriber.

4. From the **Product Type** drop down list, select the name of the product type applicable to the subscriber.
5. From the **SubDigitBuffer** drop down list, select the buffer type where the collected subscriber's digits should be stored in, before being passed to the chassis action.

   For subscriber creation, this field will be used to store the subscriber CLI, the account number and the account PIN.

   For subscriber deletion, this field will be used to store the subscriber CLI.
6. Click **Save**.

What's New

The What's New node plays the “What's New” announcement to the caller. The caller can divert to a specified service number in order to obtain further information about the content of the announcement.

Note: This node stores only the Connect To number in the Pending TN buffer and does not connect the call. Therefore a further node is required to make the connection to the specified service number.

The control plan processing can continue if telephony is allowed through the chosen exit point: Failure, Success and Outcall. No further telephony is allowed if the caller abandons the call.

Node exits – What's New

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either error / failure or that the Domain being used does not support this feature node.
2	Abandon	The caller has abandoned the call.
3	Success	The announcement played successfully, but the caller chose not to divert/connect to the service number by entering 2 or *.
4	Outcall	The caller chose to divert/ connect to the service number by entering 1.

Configuring the node – What's New

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements to play as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. Click **Save**.

Note: The **Save** button is enabled only after you have selected all the announcements.

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CCS Voucher Feature Nodes

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS Voucher feature nodes.

This chapter contains the following topics.

Play Voucher Redeemed Info

Recharge Menu

Scratch Card Recharge

Scratch Card Recharge Alternate Subscriber

Select Voucher Scenario

Voucher Commit Revoke

Voucher Recharge

Voucher Redeemed

Voucher Reservation

Voucher Type Balance Information

Voucher Type Branching

Voucher Type Recharge

Play Voucher Redeemed Info

The Play Voucher Redeemed Info node plays the voucher balance to the subscriber. The node will generate and play a multi-part announcement that is built up from the response information from a successful voucher redeem. Is to be placed after a voucher redemption node (For example, Scratchcard or Voucher Redeem and plays out what the billing engine actually redeemed.

Node exits – Play Voucher Redeemed Info

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The caller received the voucher information.
2	Abandon	The caller abandoned the call.
3	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Play Voucher Redeemed Info

This table describes the function of each field in the Configure Play Voucher Redeemed Info screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Note: You can set the node to use the system currency using the `PAVRBalancesUseSystemCurrency` parameter. For more information, see *CCS Technical Guide*.

Configuring the node – Play Voucher Redeemed Info

Follow these steps to configure the node.

1. Use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Recharge Menu

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use a combination of the **Profile Branching** and **Selection Dependent Routing** feature nodes.

The Recharge Menu feature node allows the caller to select a method of recharging an account.

Node exits – Recharge Menu

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the number of menu retries has exceeded the limit.
2	Abandon	The caller has terminated the call.
3	Escape	The caller has selected the Escape option by entering *.

Exit	Cause	Description
4	Voucher	The caller has selected the Voucher Menu option by entering key 1.
5	Credit Card	The caller has selected the Credit Card Menu option by entering key 2 when they have a PIN set. This exit is only available when the caller has previously made a credit card recharge.
6	First Credit Card	The caller has selected the Credit Card Menu option by entering key 2, and has no PIN set. This exit is only available when the caller has never before made a credit card recharge.

Configuration fields – Recharge Menu

This table describes the function of each field in the Configure Recharge Menu node screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Recharge Menu

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Scratch Card Recharge

The Scratch Card Recharge node enables a caller to use a scratch card to recharge their account, and to change the product type if required. The caller is prompted to enter their scratch card number.

The maximum number of consecutive times a caller can enter an invalid number is configured by the `MaximumBadCodeRetries` parameter in the `ccsMacroNodes` section of **eserv.config**. See *CCS Technical Guide* for details.

Note: If the Set Wallet Type feature node is used prior to the Scratch Card Recharge node, then the product type of the alternative wallet is changed when the voucher is redeemed.

Node exits – Scratch Card Recharge

This node has one entry and eight exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The caller has successfully exited the node or the wallet may not be recharged, or the voucher was successfully recharged but a product type swap request was unsuccessful.
2	Success Product Swap	The caller has successfully exited the node and requested a product type swap.
3	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not made an entry.
4	Restricted Product	The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher.
5	Abandon	The caller has terminated the call.
6	Escape	The caller has selected the Escape option.
7	Frozen	The caller's account has been set to Frozen and therefore cannot use this node.
8	Blacklist	The call has entered too many invalid scratch card numbers and has been Blacklisted.

Configuration fields – Scratch Card Recharge

This table describes the function of each field in the Configure Scratch Card Recharge node screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Scratch Card Recharge

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Scratch Card Recharge Alternate Subscriber

The Scratch Card Recharge Alternative Subscriber node enables a caller to use a scratch card to recharge another user's account, and to change the product type if required.

The caller is prompted to enter the MSISDN of the account, and re-enter for confirmation, that they wish to recharge. They are then prompted to enter the scratch card number. The caller has three attempts to enter a valid scratch card number.

Note: If the Set Wallet Type feature node is used prior to the Scratch Card Recharge - Alternate Subscriber node, then the product type of the alternative wallet is changed when the voucher is redeemed.

Node exits – Scratch Card Recharge Alternate Subscriber

This node has one entry and eight exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The caller has successfully recharged the voucher and exited the node, but a product type swap, if requested, was unsuccessful.
2	Success Product Swap	The caller has successfully exited the node and requested a product type swap.
3	Unsupported	Either, error / failure, the Domain being used does not support this feature node, or the caller has not made an entry.
4	Restricted Product	The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher.
5	Abandon	The caller has terminated the call.
6	Escape	The caller has selected the Escape option.
7	Frozen	The caller's account is Frozen and therefore cannot use this node.
8	Blacklist	The call has entered too many invalid scratch card numbers and has been Blacklisted.

Configuration fields – Scratch Card Recharge Alternate Subscriber

This table describes the function of each field in the Configure Scratch Card Recharge - Alternate Subscriber node screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.

Configuring the node – Scratch Card Recharge Alternate Subscriber

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Select Voucher Scenario

The Select Voucher Scenario node enables a subscriber to select from amongst the different ways the voucher can be redeemed, by choosing a particular scenario.

Note: It is possible for a scenario to increment a balance or extend the expiry date for the balance, or both. In addition, a scenario may also possibly change the overall account expiry date.

Node exits – Select Voucher Scenario

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	A scenario has been selected by the subscriber.
2	Failure	Any of a number of failures, for example: • Profile that should have contained the scenario list is missing or empty • Subscriber pressed escape
3	Unsupported	An unknown response was received from Voucher Management.

Exit	Cause	Description
4	Abandon	The caller has hung up before completing the scenario selection.
5	Timeout	The subscriber failed to respond within the configured timeout period

Configuring the node – Select Voucher Scenario

The configuration fields are used to establish the variable part message/announcement that the subscriber receives.

Review the examples before proceeding with the node configuration.

Follow these steps to configure the node configuration.

1. Select the **Scenario Data** from the Data Type, Location and Field drop down lists.

   Note: This where the valid scenarios are located.
2. Select the **Interaction Method** to use with the subscriber.

   Either of:

   - **Voice**
   - **USSD**, or
   - **SMS**

   Result: The lists and fields for the selected option are made available.
3. Follow the relevant instructions for the method selected.

Voice or USSD method

1. Select the announcement from each of the announcement **Set** and **Entry** drop down lists:
   - **Initial Prompt:** Select the first message.
   - **Selection Choice:** Select the scenario selection choices message.
   - **Balance Expiry Ext:** Select the balance expiry will be extended message.
   - **No Bal Expiry Ext:** Select the balance expiry will not be extended message.
   - **Account Expiry Ext:** Select the account expiry will be extended message.
   - **No Account Exp Ext:** Select the account expiry will not be extended message.
   - **Account Type Change:** Select the account type will be changed message.
   - **Final Prompt:** Select the last message to the subscriber.
2. Select the **Selected Scenario** profile from the **Data Type**, **Location** and **Field** drop down lists.

   Note: This is where the scenario number to use for the voucher redemption will be saved.
3. Click **Save**.

SMS method

1. In the **Text Notifications** panel, enter the text fields which will be used to construct a short message to the subscriber.

   Type the text for the initial prompt to the subscriber in the **Initial Prompt** field.
2. Type the text for the response choices available to the subscriber in the **Selection Choice** field.
3. Type the text for any extension on account expiry available to the subscriber in the **Acc Expiry Ext** field.
4. Type the text for no extension on account expiry available to the subscriber in the **No Acc Expiry Ext** field.
5. Type the text for any account type change available to the subscriber in the **Acc Type Change** field.
6. Select the **Resultant Message** profile from the **Data Type**, **Location** and **Field** drop down lists.

   Note: This is where the subscriber returned SMS containing the scenario number to use will be saved.
7. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Example configuration values – Select Voucher Scenario

This table shows a textual example of the variable parts to be used when configuring the **Voice** and **USSD** announcement fields.

Announcement	Example
Initial Prompt	“Your voucher has several options, please select from the following”
Selection Choice	“Press <choice> for”
Balance Expiry Ext	“with an expiry extension of <days> days”
No Bal Expiry Ext	“with no expiry”
Account Expiry Ext	“with an extension to the account expiry of <days> days”
No Account Exp Ext	"with no extension to the account expiry"
Account Type Change	“with a change of Product Type to “

Note: The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type

Translations tab in CCS. Refer to the Wallet Management chapter in the *CCS User's Guide* for details.

The above example allows the following announcement to be created:

“Your voucher has several options, please select from the following:

- Press 1 for 10 sms with an expiry extension of 10 days.
- Press 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.
- Press 3 for 20 sms with an expiry extension of 5 days.”

Example SMS values – Select Voucher Scenario

This table shows a textual example of the variable parts to be used when configuring the SMS Text Notifications fields.

SMS/Announcement	Example
Initial Prompt	“Your voucher has several options, please select from the following”
Selection Choice	“Text <choice> for”
Acc Expiry Ext	“with an extension to the account expiry of <days> days”
No Acc Expiry Ext	"with no extension to the account expiry"
Acc Type Change	“with a change of Product Type to “

Note: The available balance types are configured on the Balance Type tab in CCS. The cost strings used to report balance values are configured on the Balance Type Translations tab in CCS. Refer to the Wallet Management chapter in the *CCS User's Guide* for details.

The above example allows the following SMS to be created as a single message:

“Your voucher has several options, please select from the following:

- Text 1 for 10 sms with an extension to the account expiry of 10 days.
- Text 2 for 5 dollars and 5 sms with a change of Product Type to Platinum.
- Text 3 for 20 sms with an extension to the account expiry of 5 days.”

Warning: This may require careful use of the node in a Control Plan to split the options over several SMS messages to avoid the SMS length limitation.

Example use of node – Select Voucher Scenario

Voucher redeem options can be varied, for example:

- Voucher redeems for 120 minutes of international calling (180 minutes during our “Talk-Fest July” promo special)
- Voucher redeems for 200 short messages made within a 30 day period (300 SMS during our “Text-Fest August” promo special), or
- Gold customers receive an additional 10% on top of their chosen option.

The potential scenarios are complex enough that CCS cannot be expected to know beforehand what scenarios apply, nor what the final values to the subscriber might be. There may be only one scenario that applies, or two, or three.

CCS requires some guidance from Voucher Management, as shown in the following example interaction for redeeming a voucher:

1. Subscriber requests CCS to redeem a voucher for them.
2. CCS passes request to Voucher Management, indicates no particular scenario.
3. Voucher Management determines that this voucher has multiple scenarios, informing CCS that this is the case, along with some information to help prompt the subscriber.
4. For Voice/USSD interactions:
   - CCS prompts the subscriber to choose the scenario they prefer.

   For SMS interactions:
   - CCS constructs a short message containing all the scenario options and sends this back to the subscriber.
5. The subscriber re-requests CCS to redeem the same voucher and includes their preferred scenario option.
6. CCS passes request to Voucher Management, this time with scenario selection information.
7. Voucher Management performs redeem and updates balance values.
8. CCS notifies subscriber of success, and announces updated balance values by using the Send Short Message Notification node.

   Note: If you recharge successfully on a UBE domain which has real-time wallet notifications configured for balance changes, CCS will send a notification for the balance change as well as the notification sent from the Send Short Message Notification node. For more information about the real-time wallet notifications, see Real-Time Wallet Notifications.

Note: If there is only one scenario, then steps three to five can be skipped.

Voucher Commit Revoke

The voucher redemption process can be handled at a fine-grained level by using the Voucher Reserve and the Voucher Commit Revoke nodes. The Voucher Commit Revoke node takes the voucher identification information and commits or revokes a pre-existing voucher reservation that has been created via traversal of the Voucher Reserve node. When voucher commit is performed following a voucher reservation, then the voucher state is moved to used, and no wallet updates are done.

Node exits – Voucher Commit Revoke

This node has one entry and four exits.

Exit	Cause	Description
1	Success	The reservation that was opened on the voucher is removed. Where the node is set to be a revoke action, the state of the voucher is unchanged and the voucher can be reserved again. Otherwise, the node has performed a Commit action and the voucher state is set to Redeemed and the voucher finalized.
2	Unsupported	The Voucher Commit or Revoke action has not been successful for any of the following reasons: • Insufficient capabilities • Failed to validate configuration
3	Abandon	The Voucher Commit or Revoke action has not been successful for any of the following reasons: • Call processing not allowed • Possible interface timeout
4	Failure	The Voucher Commit or Revoke action has not been successful and a specific failure is identified. If the state of the voucher was able to be retrieved, then it is returned. Otherwise, the state is set to Unknown. A failure code and failure text are set. 2001 - Voucher batch state not active 2002 - Invalid voucher value 2003 - Invalid serial number 2004 - Voucher not found 2005 - Reservation not found 3000 - System error 4000 - Service provider not found 4001 - Invalid voucher number length 4006 - Missing subscriber identifier 4007 - Missing voucher number

Configuring the node – Voucher Commit Revoke

Follow these steps to configure the node.

1. Select the source data for the recharged subscriber.
2. Select the source data for the human readable voucher number (HRN)

3. If you need to overide the service provider, check the **Override provider** checkbox. The result is that the next section becomes available to select the source data for the alternative service provider.
4. If this is a revoke action (rather than a commit) then check the Revoke checkbox.
5. Select the profile where the Voucher State shall get stored to.
6. Select the profile where the Voucher Result Code shall get stored to.
7. Select the profile where the Voucher Result Text shall get stored to.
8. Click **Save**.

Result Codes– Voucher Commit Revoke

Success branch is always ResultCode of 0 and ResultText of Success.

The following tables describes the failure codes:

FOX (internal only)	Enumerator (internal only)	Code	Description
NACK_VoucherBatchUnavailable	failureUnavailable	2001	Voucher not found in batch
NACK_InvalidVoucherDigits	failureInvalidVoucher	2002	Invalid voucher number
NACK_VoucherAuthFailed	failureInvalidSerial	2003	Invalid serial number
NACK_UnknownVoucher	failureUnknown	2004	Voucher not found
NACK_VoucherNoReservation	failureNoReservation	2005	Reservation not found
NACK_SystemFailure (or other)	systemError	3000	System error
N/A	N/A	4000	Service provider not found
N/A	N/A	4001	Invalid voucher number length
N/A	N/A	4006	Missing subscriber identifier
N/A	N/A	4007	Missing voucher number

The following tables lists the deprecated codes:

Enumerator (internal only)	Code	Description
failed	2000	General error
communicationError	3001	Communication error
failureCreated	2011	Batch not active

Macro failures: - Do not continue processing control plan.

- (ERROR) Unexpected message type received (x2)
- (ERROR) Failed to retrieve nodePtr

- (ERROR) Invalid action status

Unsupported Branch - Not able to start processing, or unable to store profile

- Insufficient capabilities
- Failed to validate config (various)
- Failed to set voucher balances in profile (x num fields)
- Failed to store in profile (x5)

Abandon Branch

- Call processing not allowed (x2)
- Possible interface timeout (x6)

SOAP Failure result codes:

- 0 "",
- 1 "No such subscriber",
- 2 "No such service",
- 3 "Missing parameter",
- 4 "Mis-typed parameter",
- 5 "System Error",
- 6 "Operation does not exist",
- 7 "Operation not available",
- 8 "Invalid transaction type",
- 9 "Transaction not found",
- 10 "No response from ACS",
- 11 "Too many transactions",
- 12 "Duplicate tranaction",
- 13 "Invalid SOAP or service key not found",
- 14 "Operation disabled",
- 15 "Service loader balance type mapping error",
- 16 "Service loader profile data error",
- 17 "Service loader balance conversion error",
- 18 "Service loader balance type not present",

Voucher Recharge

The Voucher Recharge node allows the caller to recharge their account using a voucher number, and to change their product type if required.

Note: When a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Recharge

This node has one entry and ten exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The voucher recharge has been successful and the caller's account has been credited.
2	Success Product Swap	The caller has successfully exited the node and requested a product type swap.
3	Unsupported	The recharge has not been successful for any of the following reasons: • The Domain being used does not support this feature node • The number of menu retries has exceeded the limit • Information routing error • Timeout • Recharge Interface Not Found • Interface can not be used to recharge this voucher • Any other failure or error condition not listed for the other exits.
4	Restricted Product	The caller was unable to recharge the voucher because the caller's product type does not belong to the list of available product types for the voucher.

Exit	Cause	Description
5	Abandon	This exit is used for many error conditions, including the following: • Customer/Retailer (to be recharged/credited) was not found • Customer/Retailer (to be recharged/credited) is not initialized • Customer/Retailer (to be recharged/credited) is deactivated • Customer/Retailer (to be recharged/credited) is suspended on IN • Customer/Retailer (to be recharged/credited) is suspended on Voucher Management • Limit of number of recharge is reached • Bad customer state • Product is not rechargeable • Invalid error code for a recharge subscriber update • No recharge part for this subscriber • One of balances involved in recharge is deactivated • One of balances involved in recharge is missing • Subscriber is locked from Voucher Management • Customer/Retailer credit is too large • The value minimum of the transaction is not reached • The value maximum of the transaction value reached • Recharge value is out of range • Credit out of range • Voucher not found
6	Escape	The caller has selected the Escape option.
7	Frozen	The caller's account status is Frozen, and they are therefore forbidden to use a voucher recharge.

Exit	Cause	Description
8	Need Scenario Info	This voucher has several potential ways to be recharged. This exit is used to find out which one to use. Must always exit to a Select Voucher Scenario node.
9	Voucher Invalid	The voucher number is invalid, for any of the following reasons: • Not enough digits in the source buffer • Unexisting recharge properties • Voucher Bad Found • Tariff Plan Not Exist For This Pack • Bad Voucher Type • Voucher is in pending state • Voucher is in frozen state • Voucher is blocked • Voucher has expired • Voucher is disabled • Voucher type is not applicable • Voucher has a bad brand Id
10	Already Redeemed	The voucher number has already been redeemed.

Configuring the node – Voucher Recharge

Follow these steps to configure the node.

1. Select the Source for the voucher recharge. Either of:
   - **Interactive**, or
   - **Stored**.

   Result: The related source fields for the selected option become available.
2. Select the **Get voucher number** options:
   - If **Interactive:** Select from the announcement drop down lists the announcement to play to prompt the subscriber for the voucher number.
   - If **Stored:** Select from the profile **Data Type**, **Location** and **Field** drop down lists containing the voucher number.
3. If **Interactive:** Select the from the Announcement drop down lists the various announcements to play to the subscriber:
   - **Thankyou** announcement to play when the redeem process is concluded.
   - **Account Locked** announcement to play when the subscriber either is currently frozen, or has become frozen as a result of the voucher redeem.

- **Invalid Attempt - Created** announcement to play when the voucher being redeemed has been created, but is not yet available for redemption.
- **Invalid Attempt - Used** announcement to play when the voucher being redeemed has already been redeemed.
- **Invalid Attempt - Unavailable** announcement to play when the voucher being redeemed is no longer available (i.e. has been stopped by the telco, or expired).
- **Invalid Attempt - Invalid Number** announcement to play when the subscriber has provided an incorrect voucher number.
- **Maximum Iterations Reached** announcement to play when the number of retries a subscriber is allowed has been reached.
- **Redeem System Error : Please try later** announcement to play when the voucher redeem system is unavailable.
- **Limited Product Type Failure** announcement to play when the subscriber product type is invalid for, or would become invalid due to, the voucher recharge.

Note: If **Stored** selected, these options are all grayed out.

4. If the voucher redeem scenario is known, tick the **Have scenario selection** check box.

   Result: The Selected Scenario profile fields become available.

5. If available, from the **Selected ScenarioData Type**, **Location** and **Field** drop down lists, select the profile containing the scenario number to use for the voucher redemption.
6. From the **Scenario DataData Type**, **Location** and **Field** drop down lists, select the profile containing the currently available scenarios for voucher redemption.
7. Click **Save**.

   Note: This will be greyed out until all the required fields have been completed.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Voucher Redeemed

Warning: This feature node has now been deprecated and should no longer be used. This feature node will still function in existing control plans. For new control plans please use the **Voucher Recharge** feature node.

The Voucher Redeemed feature node retrieves a voucher number from the specified location.

The number of redeem attempts is only used to determine how the feature node should branch.

The number of attempts will be recorded each time the control plan passes through the feature node. Each time the control plan executes the feature node, the feature node will attempt only one redemption.

Note: When a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Redeemed

The node has one entry and ten exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

Exit	Cause	Description
1	Success	Voucher redeemed and subscriber account updated successfully.
2	Success Product Swap	Voucher redeemed and subscriber product type swapped.
3	Restricted Product	Voucher has a restricted product redemption list.
4	Unknown Wallet	Wallet has been deleted, not replicated correctly or some other wallet error.
5	Invalid wallet State	Subscriber account has been frozen.
6	Invalid Serial	Voucher number is invalid.
7	Already Redeemed	The voucher number has already been redeemed.
8	Voucher Invalid	The voucher number is invalid (includes not enough digits in the source buffer).
9	Retry Exceeded	The number of redeem attempts has been exceeded (as defined by the Redeem Attempts node parameter).
10	Unsupported	Either error / failure or that the Domain being used does not support this feature node.

Configuration fields – Voucher Redeemed

This table describes the function of each field in the Configure Voucher Redeemed node screen.

Field	Description
Number Source	The ACS number buffer containing the voucher number.
Redeem Attempts	Maximum number of voucher number attempts before taking the retry exceed branch.
Number of Digits	The number of digits to remove from the front of the voucher number prior to redemption.

Configuring the node – Voucher Redeemed

Follow these steps to configure the node.

1. Select the ACS buffer that contains the voucher number digits from the **Number Source** drop down list.
2. Type the maximum number of voucher number entry retries in the **Redeem Attempts** field.
3. Type the number of digits to remove from the front of the voucher digits before attempting to redeem in the **Number of Digits** field.
4. Click **Save**.

Voucher Reservation

The voucher reservation process can be handled at a fine-grained level by using the Voucher Reserve node. The Voucher Reserve node takes the voucher identification information, retrieves the set of information that is required to make wallet updates, and sets aside a voucher reservation to wait for a commit or revoke action to occur. This prevents the voucher from being used again until either the commit or revoke action is received or a timeout occurs and the voucher is either indefinitely held, or committed or revoked automatically based on the configuration. A revoked voucher enables a voucher redemption to be attempted again.

Node exits – Voucher Reservation

This node has one entry and four exits.

Exit	Cause	Description
1	Success	A voucher reservation has been created and the information needed to be able to credit a caller's account has been retrieved.
2	Unsupported	The voucher reserve action has not been successful for any of the following reasons: • Insufficient capabilities • Failed to validate configuration • Failed to set voucher balances in profile • Failed to store in profile

Exit	Cause	Description
3	Abandon	The voucher reserve action has not been successful for any of the following reasons: • Call processing not allowed • Possible interface timeout
4	Failure	The voucher reserve action has not been successful and a specific failure is identified. If the state of the voucher was able to be retrieved, then it is returned. Otherwise, the state is set to Unknown. A failure code and failure text are set. 2001 - Voucher batch state not active 2002 - Invalid voucher value 2003 - Invalid serial number 2004 - Voucher not found 2007 - Limited voucher product match 2008 - Scenario required 2009 - Voucher already redeemed 2010 - Voucher already reserved 2012 - Voucher in frozen state 2013 - Voucher in deleted state 3000 - System error 4000 - Service provider not found 4001 - Invalid voucher number length 4002 - Incorrect voucher balances tag count 4003 - Incorrect voucher balances tag type 4004 - No voucher balances 4005 - Invalid scenario number 4006 - Missing subscriber identifier 4007 - Missing voucher number

Configuring the node – Voucher Reservation

Follow these steps to configure the node.

1. Select the source for the recharged subscriber.
2. Select the source data for the human readable voucher number (HRN).
3. If you need to override the service provider, select the **Override provider** checkbox.

Result: The next section becomes available to select the source data for the alternative service provider.

4. If you need to provide a scenario number, select the **Have scenario** checkbox.

   Result: The next section becomes available to select the source data for a scenario number.

5. Select the profile where the per balance Voucher Info shall get stored to.
6. Select the profile where the Voucher State shall get stored to.
7. Select the profile where the Voucher Serial Number shall get stored to.
8. Select the profile where the Voucher Result Code shall get stored to.
9. Select the profile where the Voucher Result Text shall get stored to.
10. Select the profile where the Voucher Recharge Classification shall get stored to.
11. Click **Save**.

Result Codes – Voucher Reservation

Success branch is always ResultCode of 0 and ResultText of Success.

The following tables describes the failure codes:

FOX (internal only)	Enumerator (internal only)	Code	Description
NACK_AlreadyReserved	failureReserved	2010	Voucher already reserved
NACK_AlreadyRedeemed	failureUsed	2009	Voucher already redeemed
NACK_VoucherBatchUnavailable	failureUnavailable	2001	Voucher batch state not active
NACK_BadVoucherValue,NACK_InvalidVoucherDigits	failureInvalidVoucherValue	2006	Invalid voucher value
NACK_VoucherCreated	failureVoucherCreated	2011	Voucher in created state
NACK_VoucherFrozen	failureVoucherFrozen	2012	Voucher in frozen state
NACK_VoucherDeleted	failureVoucherDeleted	2013	Voucher in deleted state
NACK_VoucherAuthFailed	failureInvalidSerial	2003	Invalid serial number
NACK_LimitedVoucher	failureLimitedVoucher	2007	Limited voucher product match
NACK_BadScenario	failureScenarioRequired	2008	Scenario required
NACK_UnknownVoucher,NACK_AmbiguousVoucher	failureUnknown	2004	Voucher not found
NACK_SystemFailure (or other)	systemError	3000	System error
N/A	N/A	4000	Service provider not found
N/A	N/A	4001	Invalid voucher number length

FOX (internal only)	Enumerator (internal only)	Code	Description
N/A	N/A	4002	Incorrect voucher balances tag count
N/A	N/A	4003	Incorrect voucher balances tag type
N/A	N/A	4004	No voucher balances
N/A	N/A	4005	Invalid scenario number
N/A	N/A	4006	Missing subscriber identifier (ERROR)
N/A	N/A	4007	Missing voucher number (ERROR)

The following tables lists the deprecated codes:

Enumerator (internal only)	Code	Description
failed	2000	General error
communicationError	3001	Communication error
failureCreated	2011	Batch not active

Macro failures: - Do not continue processing control plan.

- (ERROR) Unexpected message type received (x2)
- (ERROR) Failed to retrieve nodePtr
- (ERROR) Invalid action status

Unsupported Branch - Not able to start processing, or unable to store profile

- Insufficient capabilities
- Failed to validate config (various)
- Failed to set voucher balances in profile (x num fields)
- Failed to store in profile (x5)

Abandon Branch

- Call processing not allowed (x2)
- Possible interface timeout (x6)

SOAP Failure result codes:

- 0 "",
- 1 "No such subscriber",
- 2 "No such service",
- 3 "Missing parameter",
- 4 "Mis-typed parameter",
- 5 "System Error",
- 6 "Operation does not exist",
- 7 "Operation not available",

- 8 "Invalid transaction type",
- 9 "Transaction not found",
- 10 "No response from ACS",
- 11 "Too many transactions",
- 12 "Duplicate tranaction",
- 13 "Invalid SOAP or service key not found",
- 14 "Operation disabled",
- 15 "Service loader balance type mapping error",
- 16 "Service loader profile data error",
- 17 "Service loader balance conversion error",
- 18 "Service loader balance type not present",

Voucher Type Balance Information

The Voucher Type Balance Information node retrieves the balances associated with a Voucher Type and stores them in a selected profile.

Node exits – Voucher Type Balance Information

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The voucher type balance information has been successfully stored in a profile.
2	Error	The voucher type could not be found or the balance information could not be extracted.

Configuration fields – Voucher Type Balance Information

This table describes the function of each field in the Configure Voucher Type Balance Information node screen.

Field	Description
Voucher Type Source options	Controls what the voucher source will be:
Select Voucher Type From area	Either: • Specifies the profile to use when **From Profile** is selected, or • The voucher type that balance information will be retrieved for when **Manual Definition** is selected.
Voucher Scenario Source options	Controls what the voucher scenario source will be:

Field	Description
Select Voucher Scenario From area	Either: • The default voucher scenario will be used when **None** is selected, or • Specifies the profile to use when **From Profile** is selected.
Store Balance In area	Specifies the profile to use to store the balance information.

Configuring the node – Voucher Type Balance Information

Follow these steps to configure the node.

Note: For more information on the Voucher Type Balance Information node configuration fields see Configuration fields – Voucher Type Balance Information.

1. In the Voucher Type Source area select either:
   - **From Profile**, or
   - **Manual Definition**.
2. Select the Voucher Type for which balance information will be retrieved. If you selected:
   - **From Profile**, select from the profile **Data Type**, **Location** and **Field** drop down lists that contains the Voucher Type you want, or
   - **Manual Definition**, select the voucher type from the **Voucher Type** drop down list.
3. In the Voucher Scenario Source area select either:
   - **None**, or
   - **From Profile**.
4. If you selected **From Profile**, in the Select Voucher Scenario From area, select the profile **Data Type**, **Location** and **Field** drop down lists that contains the Voucher Scenario you want.
5. In the **Store Balances In** area select the profile **Data Type**, **Location** and **Field** drop down lists where the balance information will be stored.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Voucher Type Branching

The Voucher Type Branching feature node branches based on the voucher type of the voucher retrieved from one of:

- The context within the control plan. For example, this would be the redeemed voucher if the Voucher Type Branching feature node is placed immediately after a Voucher Recharge feature node
- A profile field containing the voucher number

This feature node has three default branches. You can add up to twenty additional branches that you use to specify the voucher type branching rules.

The fast key for the Voucher Type Branching feature node is VTYB. You can use this value to search for the Voucher Type Branching feature node in your control plans.

Node exits – Voucher Type Branching

The Voucher Type Branching feature node has 3 to 23 exits. You can configure the number of exits within this range as required, using the **Edit Node Exits** option on the shortcut menu. See Editing node exits.

Exit	Cause	Description
1	Not found	The voucher does not exist.
2	Unsupported/Error	Indicates an internal or general system error.
3	Default	The voucher type does not correspond to a configured branch.
4 to 23	Matched	The voucher type matches one of the branches.

Configuration fields – Voucher Type Branching

This table describes the function of each field.

Field	Description
Context	Select to branch based on the voucher type of the voucher retrieved from the control plan context.
Profile	Select to branch based on the voucher type of the voucher retrieved from the specified profile location.
Voucher Number Data Type	Specifies the data type of the voucher number profile block.
Voucher Number Location	Specifies the profile block that contains the voucher number profile field.
Voucher Number Field	Specifies the profile field where the voucher number is stored. Must be a STRING, NSTRING, or LNSTRING profile field type.
All Voucher Types	Lists all the voucher types defined in the **Voucher Management > Voucher Type** screens for the current service provider.
Branch Voucher Types	Displays the branch number being configured and the associated voucher types.
Not Found	Provides the branch to take when the voucher number from the profile location does not exist.

Field	Description
Unsupported/Error	Provides the branch to take when an internal error occurs.
Default Branch	Provides the branch to take when the voucher type of the retrieved voucher is not included in any of the branch voucher type rules.

Configuring the node – Voucher Type Branching

Follow these steps to configure the Voucher Type Branching feature node.

1. Configure the required number of additional exits. The maximum number of additional exits is 20. See Editing node exits.
2. In the Configure Voucher Type Branching window, select the source for the voucher number on which to base branching. Select:
   - **Context** to branch based on the voucher type of the voucher number in the control plan context.
   - **Profile** to branch based on the voucher type of the voucher number in the specified profile field.
3. If you selected **Profile** in step 2, select the profile field location where the voucher number is stored from the **Voucher Number Data Type**, **Voucher Number Location**, and **Voucher Number Field** lists.
4. In the Branch Voucher Types area, use the **Number** up and down arrows to select the exit branch to configure.

   The voucher types configured for the selected branch appear in the panel below.
5. Add the required voucher types to the selected branch by selecting the voucher types in the All Voucher Types area, and clicking **Move to branch >>**.
6. To remove a voucher type from the selected branch; for example if you want to make the voucher type available to another branch, select the voucher type and then click **<< Replace in set**.
7. Repeat steps 4 to 6 for each branch.
8. Click **Save**.

Voucher Type Recharge

The Voucher Type Recharge node invokes the voucher type recharge billing engine action using the configured name of the voucher type. See *CCS User's Guide* for details on configuring voucher type recharges.

Note: When a voucher recharge attempt is made, the voucher's redeemed date is set to the current system date and time. The redeemed field for the voucher is set to one of:

- True for successful attempts
- False for unsuccessful attempts

This allows you to check if a voucher has been redeemed, or if a failed redeem attempt has been made.

Node exits – Voucher Type Recharge

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The billing engine returned a successful voucher type recharge indication.
2	Error	The billing engine returned a failed voucher type recharge indication.
3	Unsupported	The voucher type recharge capability is not supported.

Configuring the node – Voucher Type Recharge

Follow these steps to configure the Voucher Type Recharge feature node.

1. In the Voucher Type Source area select one of:
   - **From Profile**
   - **Manual Definition**
2. Select the voucher type to be recharged. If you selected:
   - **From Profile**, select the profile field that holds the voucher type from the **Data Type**, **Location** and **Field** lists.
   - **Manual Definition**, select the name of the voucher type to recharge from the **Voucher Type** list.

   Note: The feature node always recharges vouchers against the default scenario for the voucher type.
3. Click **Save**.

For more information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Fields.

For more information about profile field configuration, see the discussion on profile tag configuration in *NCC Advanced Control Services User's Guide*.

35

CCS Wallet Management Feature Nodes

This chapter describes the Oracle Communications Network Charging and Control (NCC) CCS Wallet Management feature nodes.

This chapter contains the following topics.

Account Activate

Account State Branch

Account Status

Account Status SMS

Apply Rewards

Balance State Branch

Balance Status

Balance Type Branching

Balance Type Cascade Branching

Copy Balance Details

Cumulative Balances

Final Subscriber Spending Limit Report – FN

Periodic Charge State Branch

Periodic Charge Subscription

Periodic Charge Transfer

Play Next Promotion

Select Credit Transfer

SMS Low Balance

Subscriber Spending Limit Report – FN

Subscriber Spending Notification Report – FN

Time Remaining

Tracker Account State Branch

Wallet Life Cycle Period Branching

Wallet State Update

Account Activate

The Account Activate feature node updates any account in pre-use state to the active state.

Node exits – Account Activate

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The caller has successfully exited the node.
2	Unsupported	Either, error / failure, or the domain being used does not support this feature node.

Configuring the node – Account Activate

This node requires no configuration data. You may change the **Node name**, if required.

Account State Branch

The Account State Branch feature node routes the call based on the state of the caller's account.

Node exits – Account State Branch

This node has one entry and eight exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from an Oracle VWS. For specific information about how responses from other billing engines map to these exits, see the technical guide for the interface for billing engine being used.

Exit	Cause	Description
1	Active	The account is active.
2	Frozen	The account has been Frozen due to dishonesty.
3	Preuse	The account has not yet been used.
4	Suspended	The account is Suspended.
5	Dormant	The account is Dormant.
6	Terminated	The account has been Expired.
7	Unsupported	Either, error / failure, or the Domain being used does not support this feature node.
8	Abandon	The caller has abandoned the call.

Configuration fields – Account Status

This table describes the function of each field in the Configure Account Status node screen.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncements	Allows the selected announcement to be played.
SkipAnnouncement	Prohibit playing of the balance announcement.
IgnoreThreshold	Ignore the account expiry warning threshold for playing announcement.

Configuring the node – Account State Branch

This node requires no configuration data. You may change the **Node name**, if required.

Account Status

The Account Status feature node plays information regarding the caller's account and balances. Specifically, it will play a no-credit announcement, if appropriate, and inform the caller of their:

- Account expiry date
- Default balance expiry
- Balance amounts

Node exits – Account Status

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	All information has been played successfully.
2	Abandon	The caller has abandoned the call.
3	Unsupported	Either, error / failure, or the domain being used does not support this feature node.

Configuring the node – Account Status

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.

2. For **each relevant** announcement, select the **Enable Announcement** check box as required.
3. Select the **Skip Announcement** check box as required. When checked, this Skip Balance Announcement option will play account status and **not** include the balance information within the announcement set.
4. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Account Status SMS

The Account Status SMS feature node sends a short message to the caller using templates defined for each language. The balance types played in the messages are stored in **eserv.config**.

The templates available for selection are configured through the **ACS > Configuration > Notification** screens.

The available parameters are:

- Wallet type
- Balances and balance expiries

For more information on the available parameters see Message parameters.

Note: This node requires an existing short message service.

Node exits – Account Status SMS

This node has one entry and two exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, or the domain being used does not support this feature node. A text message has not been sent.
2	Success	A text message has been successfully sent to the short message service.

Configuring the node – Account Status SMS

Follow these steps to configure the node.

1. Using the drop down lists in the Notification panel, select the **Application** where the notification type for the SMS is defined.

   Note: ACS will be used by default.
2. Select the **Notification Type** from the drop down list.
3. Click **Save**.

Message parameters – Account Status SMS

Message parameters included in the notification template message text are searched for and replaced with an appropriate value.

Here is the list of available parameters.

Parameter	Description
$1	The wallet description. **Note:** This is configured on the **Wallet Name Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.
$2	The balance details for each balance type reported. Details include: • Balance description • Balance amount • Balance expiry (either the number of days to expiry or the no balance expiry text) **Note:** The balance details string is configured on the **Balance Type Translations** tab in the Wallet Management screen in CCS. You must configure an entry for all languages used for sending notifications. See *CCS User's Guide* for details.

Message example – Account Status SMS

Here is an example template and the corresponding message generated by the Account Status SMS node.

A template of:

A/c type $2 - balance: $1

will send the message:

"A/c type: Primary wallet - balance: Eng Gen Bal GBP 1873.56-no expiry"

Apply Rewards

The Apply Rewards feature node applies the real time rewards that the current subscriber has qualified for.

The node will determine whether or not the subscriber qualifies for a configured reward based on their product type and the current value of their balance. As a result of applying a reward, the subscriber's product type many change.

Note: A reward will not be applied if the current date falls outside the reward period.

Node exits – Apply Rewards

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The rewards have been successfully applied.
2	No Rewards Applied	The subscriber does not qualify for any rewards.
3	Error	An error/failure occurred when attempting to apply rewards.
4	Unsupported	The Domain being used does not support this type of reward.

Configuring the node – Apply Rewards

This node requires no configuration data. You may change the **Node name**, if required.

Balance State Branch

The Balance State Branch feature node routes the call based on the state of the caller's account balance. To calculate the caller's account balance a configurable set of balance types will be checked. The set of balance types to be checked is configured in the SLC **eserv.config** file, see *CCS Technical Guide* for details.

This node reads the caller's Product Type node options configured for the Balance State Branch and determines that if the Use Threshold field is:

- Selected, then the Product Type Threshold is ignored and the Node Balance Threshold is used instead
- Not selected, then the Product Type Value is used

Note: The node will filter out all Expenditure Balance Types and not include them in the balance calculation. See *CCS User's Guide - Balance Types* topic.

Node exits – Balance State Branch

This node has one entry point and seven exits that are set by the system. The number of exit points is fixed and may not be edited by the user.

Exit	Cause	Description
1	Credit OK	The available funds (which may or may not include credit limit and/ or committed reservations) is >= the threshold.
2	Unsupported	Either, error / failure, or the domain being used does not support this feature node.
3	No Credit	The value being compared (which may or may not include credit limit and/ or committed reservations) is <= zero.

Exit	Cause	Description
4	Credit < Threshold	The available credit (which may or may not include credit limit and/ or committed reservations) is less than the threshold used (which is either the product type **Balance status warning threshold** value or the node value). See Threshold example.
5	Balance Expired	The account balance has expired.
6	Account Expired	The account has expired.
7	Abandon	The caller has abandoned the call.

Configuring the node – Balance State Branch

Follow these steps to configure the node.

1. Select the threshold source value to use:
   - Select the **UseThreshold** check box to use the **node** threshold value.
   - Deselect the **UseThreshold** check box to use the **Product Type** threshold value (this is the **Balance status warning threshold** value configured at **Subscriber management > Product Type > Node Options**).
2. Type the comparison balance threshold to use in the **Threshold** field.

   Note: A value must be entered - even if zero - before the **Save** button becomes available.
3. Select the additional threshold considerations:
   - Select the **Above Credit Limit** check box to include the subscriber's credit limit.
   - Select the **Excl. Reserved Funds** check box to ignore any committed reservations.

   Tip: See Threshold example for how these check boxes work together.
4. Click **Save**.

Threshold example – Balance State Branch

This example uses the following values:

- Threshold is $115
- Actual balance is $20
- Credit limit is $100
- Outstanding reservation is $5

This table shows how the comparison value is computed for these values:

Exclude Reservations	Credit Limit Not Included	Credit Limit Included
No	Actual balance = $20 Exit 4 taken (comparison < threshold)	Actual balance + Credit Limit $20 + $100 = $120 Exit 1 taken (comparison > threshold)
Yes	Actual balance - Reservations $20 - $5 = $15 Exit 4 taken (comparison < threshold)	Actual balance - Reservations + Credit Limit $20 - $5 + $100 = $115 Exit 1 taken (comparison = threshold)

Balance Status

The Balance Status feature node plays announcements to provide the user with information about their account. The node plays:

- Individual balances
- A no-credit announcement, if necessary
- Expiry dates for both the user's account and balance(s)

Node exits – Balance Status

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	All announcements have completed successfully.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure or the Domain being used does not support this feature node.

Configuration fields – Balance Status

This table describes the function of each field.

Field	Description
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
EnableAnnouncements	If check box selected, allows the selected announcement to be played.
Committed Funds	When selected, exclude committed reservations in the available funds played in the announcement.

Field	Description
Unreserved Funds	When selected, exclude uncommitted reservations in the available funds played in announcements (the uncommitted reservation amount is subtracted from the available funds).

This node only deals with information for the balance types specified in the `BSAnnBalanceTypes` array of the `ccsMacroNodes` section of the **eserv.config** file on the SLC.

This node will only play expiry information if the expiry is within the ranges specified in the caller's:

- Product type account expiry warning threshold
- Product type balance expiry warning threshold

Configuring the node – Balance Status

Follow these steps to configure the node.

1. For **each relevant** announcement, use the drop down lists to select the pre-recorded announcements that are to be played as prompts to the caller.

   Select the specific **Announcement Set** to which the **Announcement Entry** belongs. Only valid announcements are available from the lists.
2. For **each relevant** announcement, tick the **Enable Announcement** check box as required.
3. Select the **Funds to Report** option:
   - Select **Unreserved Funds** to exclude uncommitted reservations in the available funds played in announcements, or
   - Select **Committed Funds** to exclude committed reservations in the available funds played in the announcement.
4. Click **Save**.

   Note: This will be greyed out until all the announcement sets have been selected.

Balance Type Branching

Allows for threshold branching on the values in the subscriber's wallet of chargeable balance types (for example, 'General Cash'), expenditure balance types or cross-balance types.

For example, this node could be used to apply a discount to the current call, based on the existing value of a particular balance. The call in progress in the current control plan will not have been billed yet, so will not be considered for such a discount.

Node exits – Balance Type Branching

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	>	The available funds are greater than the configured threshold.
2	<	The available funds are less than the configured threshold.
3	=	The available funds are the same as the configured threshold.
4	No Balance Found	The specified balance type was not found in the subscriber's wallet.
5	Unsupported	Any error/failure encountered.

Notes:

- A zero wallet balance could potentially use exits 1, 2 or 3 depending on the threshold, credit limit, reservation combination value.
- Telephony actions are allowed after exits 1 to 4.
- See Threshold example for understanding how the available balance is calculated.

Configuring the node – Balance Type Branching

Follow these steps to edit the node configuration.

1. Select the **Balance Category** to limit the balance type list to select from for the branch comparison.

   One of:

   - **All** - all balance types for the current ACS customer will be listed.
   - **Chargeable** - only those balance types for the current ACS customer that can be used for charging will be listed. For example this will exclude all 'Expenditure' and 'Cross Balance Type Discount' balance types.
   - **Expenditure** - only those balance types for the current ACS customer defined as 'Expenditure' balance types (daily, weekly, monthly, yearly, wallet) will be listed.
   - **CrossDiscount** - only those balance types for the current ACS customer defined as 'Cross Balance Type Discount' balance types will be listed.
   - **Internal** - only those balance types for the current ACS customer defined as 'Internal' balance types will be listed.

2. From the **Balance Type** drop down list, select the balance type to use in the branch comparison.
3. Type the comparison threshold to use in the **Threshold** field.
4. Select the additional threshold considerations:

   - Select the **Above Credit Limit** check box to include the subscriber's credit limit.
   - Select the **Excl. Reserved Funds** check box to exclude any committed reservations.

Tip: See Threshold example for how these check boxes work together.

5. Click **Save**.

Threshold example – Balance Type Branching

If the:

- threshold is $115
- actual balance is $20
- credit limit is $100, and
- an outstanding reservation for $5

This table shows how the comparison value is computed for these values:

Exclude Reservations	Credit Limit Not Included	Credit Limit Included
No	Actual balance = $20 Exit 2 taken (comparison < threshold)	Actual balance + Credit Limit $20 + $100 = $120 Exit 1 taken (comparison > threshold)
Yes	Actual balance - Reservations $20 - $5 = $15 Exit 2 taken (comparison < threshold)	Actual balance - Reservations + Credit Limit $20 - $5 + $100 = $115 Exit 3 taken (comparison = threshold)

Balance Type Cascade Branching

Allows for threshold branching on the values of the balances held in the selected balance type cascade.

The summed value of the balances for the unit type configured in the node will be used when determining the appropriate branch to follow.

Node exits – Balance Type Cascade Branching

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	>	The sum of the balances in the balance type cascade of the specified unit is greater than the configured threshold. Telephony actions are allowed after this branch.
2	<	The sum of the balances in the balance type cascade of the specified unit is less than the configured threshold. Telephony actions are allowed after this branch.

Exit	Cause	Description
3	=	The sum of the balances in the balance type cascade of the specified unit is the same as the configured threshold. Telephony actions are allowed after this branch.
4	No Bal Casc Found	The specified balance type cascade was not found. Telephony actions are allowed after this branch.
5	No Balance Found	There were no balances for the specified unit type in the selected balance cascade. Telephony actions are allowed after this branch.
6	Unsupported	An error/failure was encountered.

Configuring the node – Balance Type Cascade Branching

Follow these steps to configure the node.

1. From the **Balance Type Cascade** drop down list, select the cascade to use in the branch comparison.
2. Select the **Balance Units** to use. Only balances types with the selected unit type will be summed and compared against the threshold value.

   Note: If you selected **Units** then all balances, except cash or time, will be summed.
3. In the **Threshold** area type the comparison balance threshold value for the selected balance units.

   Note: Only the fields relevant to the selected balance units will be enabled.
4. Click **Save**.

Copy Balance Details

The Copy Balance Details feature node allows you to copy values from a balance to profile fields. You can use the extracted balance information later in the control flow for comparison with other data.

You can copy the following values to a specified profile field:

- Total user balance (copy to any numeric or string profile fields)
- Total system balance (copy to any numeric or string profile fields)
- Unreserved user balance (copy to any numeric or string profile fields)
- Unreserved system balance (copy to any numeric or string profile fields)
- Balance expiry date (copy to any date profile field)

- Maximum credit for limited credit balances (copy to any numeric or string profile fields)
- Balance valid from date (copy to any date profile field)
- Wallet expiry date (copy to any date profile field)

In addition, you can copy balance buckets to a profile field. The values you can select to copy are based on the balance bucket's expiration date. **Earliest expiring bucket** selects the balance bucket that has the earliest future expiration date. **Latest expiring bucket** selects the balance bucket that has the latest (furthest in the future) expiration date. There may be buckets with no expiry date set (meaning they will never expire). The latest expiring bucket is the bucket with the latest set expiry date, even if there are buckets that will never expire. **First future bucket** selects the balance bucket that has the earliest future start date. The feature node copies values only from active buckets.

You can copy the following balance bucket values to a specified profile field:

- Earliest expiring bucket user value (copy to any numeric profile field)
- Earliest expiring bucket system value (copy to any numeric profile field)
- Earliest expiring bucket expiry date (copy to any date profile field)
- Latest expiring bucket user value (copy to any numeric profile field)
- Latest expiring bucket system value (copy to any numeric profile field)
- Latest expiring bucket expiry value (copy to any numeric profile field)
- First future bucket user value (copy to any numeric profile field)
- First future bucket system value (copy to any numeric profile field)
- First future bucket start date (copy to any date profile field)
- First future bucket expiry date (copy to any date profile field)

Note:

Buckets that never expire and buckets that are currently inactive are excluded when determining earliest and latest expiring buckets.

When determining the first future bucket, if buckets have the same start date but different expiry dates, the bucket with the earliest expiry date is copied.

If multiple buckets have the same start date and the same expiry date, then the values of those buckets are summed and the total is copied.

Node exits – Copy Balance Details

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	All balance data values have been stored in the target profile fields.
2	Not Found	The balance does not exist.
3	Error	An internal error has occurred.
4	Unsupported	Billing engine does not meet the requirements of the balance copy feature node.

Configuring the node – Copy Balance Details

Follow these steps to configure the node.

1. Filter the list of available balance types using the **All**, **Chargeable**, **Expenditure**, **CrossDiscount**, or **Internal** options. Each option will present different balance types available to copy. For example, **All** provides no filtering and presents all balance types available to copy. **Chargeable** presents only those balance types available for charging operations.
2. Select the balance type whose value you want to copy from the **Balance Type** list.
3. For each balance item that you want to copy, perform the following steps:
   - Select the type of balance value to copy from the **Source Field** list.
   - Select the profile field to which the balance data will be copied from the **Target Data Type**, **Target Location** and **Target Field** lists.
   - Click **Save**.
4. To add another set of source and target fields, click **Add** and repeat step 2.
5. Click **Save**.

Note: To delete a configuration, select the field values corresponding with the existing configuration you want to delete. Then select the check box next to the source and target fields and click **Delete Selected**.

Cumulative Balances

The Cumulative Balances feature node provides the caller with details of their cumulative balances.

For each cumulative balance category configured for one of:

- Product type
- The selected cumulative balance plan (only available if the cumulative balance plan feature has been activated on your system), the node:
  - Sums the balances of the balance types assigned to the balance category
  - Plays the configured announcements

If there are no balance types assigned to a particular category, then the category is ignored. If the cumulative balance for a category is zero, then the announcement is only played if the Play Zero flag is set for the category.

Notes:

- For details on configuring balance category announcements, see the *CCS User's Guide*.
- To have unreserved balances reported for subscriber's cumulative balances, the option must be configured in the **Wallet Management > Cumulative Balance Plans** tab > **New/Edit > Add Balance Category** button > **Use Unreserved Balances** check box.

Node exits – Cumulative Balances

This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	All announcements have completed successfully.
2	Abandon	The caller has terminated the call.
3	Unsupported	Either, error / failure, or the domain being used does not support this feature node.
4	Not Found	No announcements can be played because balance categories have not been set up for the product type.

Configuration fields – Cumulative Balances

This table describes the function of each field in the Configure Cumulative Balances node screen.

Field	Description
Balance Plan	List of all the available cumulative balance plans for the current service provider. **Notes:** • Cumulative balance plans are configured in the Wallet Management screen in CCS. • The special value "Use Product Type" may be used to select the default cumulative balance plan configured for the product type. • This field will not be visible in the screen if the cumulative balance plans feature has not been activated on your system.
EnableAnnouncement	Select to enable the selected title announcement to be played. Defaults to disabled.
Announcement Set	List of all the available announcement sets.
Announcement Entry	List of all the announcements belonging to the selected announcement set.
Category Title Announcement	Select **EnableAnnouncement** to enable playing the category title announcement. Defaults to disabled.

Field	Description
Play No Credit for Balances	Select **EnableAnnouncements** to enable playing no credit balance announcements for balances that are negative. The announcement that is played will not include any variable parts; for example, the announcement played might be: **Your balance is negative, please recharge.** Defaults to disabled. **Note:** Zero balances are treated as negative.
Play Positive Only Expiries for Balances	Select **EnableAnnouncements** to enable playing announcements for balances with positive expiries only. Defaults to disabled.
Play Single Day Expiries for Balances and Account	Select **EnableAnnouncements** to enable playing announcements for account and balances with single day expiries. Defaults to disabled.

Configuring the node – Cumulative Balances

Follow these steps to configure the node.

1. From the **Balance Plan** drop down list select the cumulative balance plan to use. If you select the special value "Use Product Type" then the default balance plan configured for the Product Type will be used.

   Note: This field will only be visible in the screen if the cumulative balance plan feature has been activated on your system. For more information on activating features in CCS, see the *CCS Installation Guide*.

2. If you want a title announcement to be played to the caller, in the Title Announcement area tick the **Enable Announcement** check box. Then use the drop down lists to select the **Announcement Set** and **Announcement Entry** to play. Only valid announcements are available from the lists.

   Note: You must select an announcement set and entry even if you do not enable the announcement.

3. For each announcement you want to play, in the relevant announcement area tick the **Enable Announcement(s)** check box.

   Note: The cumulative balance category announcements played are configured in CCS either:

   - using the cumulative balances option on the Product Type screen, or
   - if the Cumulative Balance Plan feature has been activated, then they are configured on the Cumulative Balance Plan tab in the Wallet Management screen.

   For more information see the *CCS User's Guide*.

4. Click **Save**.

   Note: This will be greyed out until the title announcement and entry has been selected.

Final Subscriber Spending Limit Report – FN

This node implements the Session-Termination-Request. The result of the node is a Session-Termination-Answer.

Node exits – Final Subscriber Spending Limit Report

This node has one entry and 3 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the Apply Charging message. SYIF returned success.
2	Unknown Session	FSY request sent to VWS, but there is no ongoing session. Respond with Result-Code DIAMETER_UNKNOWN_SESSION_ID.
3	Unsupported	Generic/system failure.

Periodic Charge State Branch

The Periodic Charge State Branching feature node branches on the state of a subscriber's subscription to a periodic charge. The subscriber which is checked is the one associated with the MSISDN which is currently populated in the CLI call context field. The periodic charge to check is specified in the node's configuration.

Amongst other uses, the Periodic Charge State Branch node can be used for:

- Checking a subscriber's subscription status before providing a service
- Error checking in BPL tasks used for handling periodic charge subscriptions
- Routing in a periodic charge IVR control plan

For more information about subscribers and periodic charges, see *CCS User's Guide*.

For more information about call context fields, see *CPE User's Guide*.

Node exits – Periodic Charge State Branch

This node has one entry and six exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsubscribed	Corresponds to the periodic charge "unsubscribed" state and all states not covered by other exit branches.
2	Active	Corresponds to the periodic charge "active" state and active sub-states.

Exit	Cause	Description
3	Grace	Corresponds to the periodic charge "grace" state and grace sub-states.
4	Terminated	Corresponds to the periodic charge "terminated" state.
5	Unavailable	The wallet does not have a bucket of the required type.
6	Unsupported	Exit branch for error conditions.

Configuring the node – Periodic Charge State Branch

Follow these steps to configure the node.

1. In the **Periodic Charge Name** section select either the location of the charge name or charge name you want to branch on the state of. Select one of:
   - **From Profile** (for the location)
   - **From Node** (for the name)

   Result: The relevant fields become available.
2. If **From Profile**: select the location from the **Data Type**, **Location** and **Field** drop down lists.
   - If **From Node**: select the name from the **Name** drop down list

   Notes:
   - The profile **Field** is populated by the records configured on the Periodic Charge tab on the Wallet Management screen.
   - The name list are all the Periodic Charge names for this subscriber.
3. From the **Change State** drop down list, select the state the subscriber's periodic charge should be changed to.

   Examples:
   - To subscribe a subscriber to a periodic charge, select **Subscribe**.
   - To unsubscribe a subscriber from a periodic charge, select **Unsubscribe**.
   - To trigger a loss of service, select **Terminate**.
   - To enable the first grace state on the VWS, select **Grace**.
4. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Periodic Charge Subscription

The Periodic Charge Subscription feature node changes the state of a subscriber's periodic charge to a new specified state. The affected subscriber is the subscriber who is associated with the MSISDN which is currently populated in the CLI call context field.

Note: If you are using periodic charge groups, you should ensure a subscriber cannot have two concurrent subscriptions to periodic charges within the same periodic charge group. You can use the Periodic Charge State Branch node to check the state of a specified periodic charge.

For more information about:

- Subscribers and periodic charge configuration, see *CCS User's Guide*
- Call context fields, see *Feature Nodes Reference Guide*

Node exits – Periodic Charge Subscription

This feature node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Any error except billing engine errors.
2	Not Subscribed	Subscriber has no bucket of the correct type for this charge, and the request was for an unsubscribe or a terminate.
3	Success	State changed successfully. **Note:** This includes successful unsubscribe actions.
4	Failure	Subscription not allowed (for example, the periodic charge is not associated with the subscriber's product type).
5	Error	Billing engine error.

Periodic Charge Subscription Fields

This table describes the configuration fields for the Periodic Charge Subscription feature node.

Field	Description
Name	The name of the subscriber's periodic charge. You configure periodic charges in the Wallet Management screens in the Prepaid Charging UI. For more information, see *NCC Charging Control Services User's Guide*.

Field	Description
State Change	(Optional) Lists the states that the subscriber's periodic charge can be changed to. Defaults to `Subscribe`. The `Charge Alignment` state is available only if the selected periodic charge is based on service activation or reference date.
Apply Charge check box	You can select to apply charging if **State Change** is set to: • `Subscribe` and the charge type of the specified periodic charge is one of: `Debit`, `Credit`, `Debit and Credit`, `Credit Plan`, or `Debit and Credit Plan` • `Unsubscribe` and pro-rating has been defined for the specified periodic charge • `Charge Alignment` and pro-rating has been defined for the specified periodic charge
Pro-Rate Charge check box	You can select to apply pro-rating if all the following conditions are true: • **Apply Charge** is selected • Pro-rating is defined for the specified periodic charge • **State Change** is set to either `Subscribe` or `Charge Alignment`, and the charge type configured for the periodic charge is not `Control Plan` or `Notification Only` The **Pro-Rate Charge** check box is disabled and pre-selected when all the following conditions are true: • **State Change** is set to `Charge Alignment` or `Unsubscribe` • **Apply Charging** is selected • Pro-rating is defined for the specified periodic charge
Set Charge Day check box	You can select to set the periodic charge day if **State Change** is set to `Subscribe` and the specified periodic charge is based on service activation. The **Set Charge Day** check box is disabled and pre-selected if **State Change** is set to `Charge Alignment`.
Reference Date profile fields	The profile field location for the date on which to base the schedule for the periodic charge.
Charge Date	If **State Change** is set to `Subscribe` or `Charge Alignment`, and the specified periodic charge is based on service activation or reference date, then you can specify a charge date in the **Month of Year**, **Day of Month**, or **Day of Week** profile fields.

Field	Description
Month of Year (Charge Date) profile fields	The profile field location for the month when the periodic charge will be applied. The period configured for the periodic charge must be one of: quarterly, half yearly or annually.
Day of Month (Charge Date) profile fields	The profile field location for the day of the month when the periodic charge will be applied. The period configured for the specified period charge must be one of: monthly, quarterly, half yearly, annually, or custom months.
Day of Week (Charge Date) profile fields	The profile field location for the day of the week when the periodic charge will be applied. The period configured for the specified periodic charge must be weekly.

Configuring the node – Periodic Charge Subscription

Follow these steps to configure the Periodic Charge Subscription feature node.

1. From the **Name** list select the name of the periodic charge that you want to update.
2. From the **Change State** list, select the state that the subscriber's periodic charge should be changed to.

   Examples:

   - To subscribe a subscriber to a periodic charge, select `Subscribe`
   - To unsubscribe a subscriber from a periodic charge, select `Unsubscribe`
   - To trigger a loss of service, select `Terminate`
   - To align charges based on service activation or reference date, select `Charge Alignment`
   - To enable the first grace state on the VWS, select `Grace`
3. Complete the feature node configuration by selecting the required options from the enabled fields. The fields that are enabled depend on the configuration specified for the periodic charge and selected **State Change**.

   To:

   - Apply the charge, select **Apply Charge**
   - Apply pro-rating to the charge, select **Pro-Rate Charge**
   - Set the charge day, select **Set Charge Day** and select the profile field that contains the date you want to use from the **Charge Date** profile field lists
   - Specify the reference date for the periodic charge schedule, select the profile field that contains the date you want to use from the **Reference Date** profile field lists

   For more information about the Periodic Charge Subscription fields, see Periodic Charge Subscription Fields

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Periodic Charge Transfer

The Periodic Charge Transfer node transfers one periodic charge subscription to another periodic charge from the same group. The state and charge date remain the same, only the periodic charge subscription is changed.

The change is made for the subscriber with the CLI which matches the current calling logical number buffer in the Call Context profile. The subscription which is terminated, is the subscription which is in the periodic charge group specified in the Periodic Charge Group field.

Warning: If a subscriber is concurrently subscribed to more than one subscription in a group, the transfer will fail. Subscription services should be designed to ensure a subscriber does not have concurrently subscriptions to more than one periodic charge in a periodic charge group.

Node exits – Periodic Charge Transfer

This node has one entry and seven exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	The target periodic charge is not supported by the VWS.
2	Not Subscribed	The subscriber was not subscribed to a periodic charge in the configured group. One of: • The subscriber's account did not have a subscription balance for any periodic charge in the group specified in the Periodic Charge Group field • The current subscription had a state of Unsubscribed or Terminated
3	Not In Product	The target periodic charge is not associated with the same product type as the subscriber's current periodic charge.
4	Success	The wallet and subscription have been successfully changed, or the subscriber was already subscribed to the target periodic charge.

Exit	Cause	Description
5	Failure	The wallet or subscription balance update has failed on the VWS.
6	Config Error	The configured group or target periodic charge is not found in the service provider's configuration. The group or periodic charge may have been changed since the control plan was last saved. This exit is also taken if the subscriber has more than one subscription within the periodic charge group. The service may need checking to see if it allows subscribers to subscribe to more than one periodic charge in a periodic charge group.
7	Error	An error not covered by the other exits has occurred.

Configuring the node – Periodic Charge Transfer

Follow these steps to configure the node.

1. From the **Periodic Charge Group** drop down list, select a group the target periodic charge belongs to.
2. From the **Transfer Charge** drop down list, select the periodic charge the subscriber's subscription will be changed to.
3. Click **Save**.

Play Next Promotion

The Play Next Promotion feature node calculates the subscriber's next promotion based on their current balances and if required, plays the announcement associated with the promotion.

Only one promotion will be selected, based on the:

- Available promotions defined for the service provider and associated with the subscriber's product type
- Balance cascade used to identify the qualifying balances
- Promotion period

If more than one promotion qualifies, then the promotion with the smallest difference between the promotion threshold and the current balance value will be selected. Optionally, the name of the selected promotion can be stored in a profile tag field.

Promotion rules

Here are the rules that apply to promotions played by the node.

1. The promotion must have one of these event categories:
   - balance recharge
   - balance credit
   - balance expiry
   - tracker threshold
   - tracker expiry
2. The subscriber must be eligible for the promotion based on the promotion white or black list.
3. The current value for the event balance type must meet the defined conditions.

Note: The promotion details are configured in the Promotion Manager screens.

Node exits – Play Next Promotion

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	A promotion was successfully selected and either played or stored to a profile tag field.
2	Not Supported	The Domain being used does not support promotions.
3	Error	A promotion could not be selected or an error/failure occurred while attempting to play/store the promotion.

Configuring the node – Play Next Promotion

Follow these steps to configure the node.

1. If you want to play the title announcement configured in the node, in the Title Announcement area select the **Play Announcement** check box, then select the announcement set and entry to play from the drop down lists.
2. If you want to play the announcement configured for the promotion in the Promotion Manager screens, select the **Play Announcement** check box in the Promotion Announcement area.

   Note: The announcements configured for rewards in the Wallet Management screens will be used for licensed versions of Prepaid Charging which are earlier than version 4.3.0.0.
3. If you want to store the promotion name in a profile tag field then in the Destination Profile area, select the **Store Promotion** check box. Then using the **Data Type**, **Location** and **Field** drop down lists select the profile where the information will be stored.

4. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

Select Credit Transfer

Plays an announcement for each credit transfer associated with the subscriber's product type. The user can interrupt the announcements to select a service.

The announcements will be played in credit transfer name order. If a credit transfer does not have an announcement associated with it, then it will be skipped.

Node exits – Select Credit Transfer

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	Either all possible announcements were played or there were no credit transfers available for the subscriber's product type.
2	Selected	The user successfully selected a credit transfer service.
3	Abandon	The user disconnected the call.
4	Error	An error/failure occurred playing the announcements or when selecting a credit transfer service.
5	Unsupported	The Domain does not support credit transfer services.

Configuring the node – Select Credit Transfer

Follow these steps to configure the node.

1. In the **Transfer Type** area select the type of credit transfer for which announcements will be played. Select:
   - **Any** to play both Peer to Peer and Service Bundle announcements
   - **Peer to Peer** to only play Peer to Peer announcements, or
   - **Service Bundle** to only play service bundle announcements.
2. Select the **Save User Selection** from the **Data Type**, **Location** and **Field** drop down lists.

3. In the **Title Announcement** area select the announcement set and entry that will be played first.
4. In the **Press 1** to **Press 10** areas select the announcement sets and entries to associate with the available credit transfers. Announcements for a maximum of ten credit transfer options may be played to the user.
5. Click **Save**.

Note: The list of data types is fixed at installation time for each feature node or screen.

Further reference:

- For information about profile blocks (data type, location, and field) and how to use them, see Profile Blocks and Tags.
- The primary tag lists are configured in the **SMS > Services > ACS Service > Configuration > Profile Tag Details** and **Profile Tag Mapping** tabs (see *ACS User's Guide, Profile Tag Details* for more information).

SMS Low Balance

The SMS Low Balance feature node sends an SMS to a subscriber when their balance falls below a specified threshold.

The message delivered by the SMS uses the ACS LowBalanceWarning Notification Type template. This node does not support the inclusion of any parameters in the notification template and therefore will send a low balance text message only.

For more information about configuring Notification Types see the Configuration chapter in the *ACS User's Guide*.

Note: You must configure a Notification Template for all languages that may be used to deliver the low balance warning message.

Node exits – SMS Low Balance

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Unsupported	Either, error / failure, or the Domain being used does not support this feature node. The balance has not been checked.
2	Success	The Balance was equal to or higher than the threshold.
3	Low Balance	The Balance was lower than the threshold. An SMS will be sent from the Notification Interface using the ACS LowBalanceWarning notification type template. For more information on notification type templates, see *ACS User's Guide*.

Configuration fields – SMS Low Balance

This table describes the function of the field in the Configure SMS Low Balance node screen.

Field	Description
Threshold	The credit value used to determine when the subscriber gets sent a low credit message.

Configuring the node – SMS Low Balance

Follow these steps to configure the node.

1. Type the credit **Threshold** value for triggering the low credit TXT message.
2. Click **Save**.

Subscriber Spending Limit Report – FN

This node will create the session and associate the policy counters.

The result of the node will be a Spending-Limit-Answer containing a Policy-Counter-Status-Report.

The same node can be used for both initial and intermediate SLR messages.

Node exits – Subscriber Spending Limit Report

This node has one entry and 5 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the Apply Charging message. SYIF returned success.
2	Invalid Request Type	A second SLR can only be accepted if the Request Type is INTERMEDIATE_REQUEST. If a second Initial Request is received, a DIAMETER_INVALID_AVP_VALUE Result-Code should be sent back to the PCRF.
3	Unknown Session	If the Request Type in the SLR is INTERMEDIATE_REQUEST, but there is no ongoing session, respond with Result-Code DIAMETER_UNKNOWN_SESSION_ID.

Exit	Name	Cause
4	Unknown Policy Counter	When the Request Type is INITIAL_REQUEST if any of the SLR Subscribed Policy Counter List entries are entries that do not exist on the OCS, respond to the PCRF with Result-Code DIAMETER_ERROR_UNKNOWN_POLICY_COUNTERS. When the Request Type is INTERMEDIATE_REQUEST if any of the SLR Subscribed Policy Counter List entries are entries that do not exist on the OCS, respond to the PCRF with Result-Code DIAMETER_ERROR_UNKNOWN_POLICY_COUNTERS. The existing session should not be affected.
5	Unsupported	Generic/system failure.

Subscriber Spending Notification Report – FN

This node implements the Status Notification Request. It will take a notification from the beServiceTrigger though the OSD service interface following a balance impact action. The DSY interface can then send a Spending-Status-Notification-Request.

Node exits – Subscriber Spending Notification Report

This node has one entry and 3 exits. The number of exits cannot be changed.

Exit	Name	Cause
1	Success	Sent the SNR, SYIF returned success.
2	Unsupported	Sent the SNR, SYIF returned failure.
3	Failed	Generic/system failure.

Time Remaining

The Time Remaining feature node determines the remaining time available, at call start, based on a subscriber's current cash balance.

This information is stored in configurable profile fields to be used by subsequent nodes in the control plan.

For Example: The Play Variable Part Announcement node will play the total available reservation duration subsequently in the control plan.

Node exits – Time Remaining

This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	Rate details retrieved successfully and profile tags are populated.
2	Rating Failure	Rate details could not be retrieved from the VWS due to invalid wallet state or incorrect rating configuration.
3	Error	An error occurred when attempting to read the feature node configuration or update a profile tag.
4	Unsupported	Either, error / failure, since the required chassis action is not supported by the VWS.
5	Insufficient Funds	A reservation failed on the VWS either because the subscriber's wallet didn't contain a sufficient balance to meet one of: • The minimum call duration • The billing resolution of the associated rating rule

Configuration fields – Time Remaining

This table describes the function of each field in the Configure Time Remaining node screen.

Field	Description
(Total Seconds) Data Type	Indicates the type of profile where the total duration value is stored.
(Total Seconds) Location	Indicates the buffer location of the total duration value, in seconds.
(Total Seconds) Field	Indicates the profile tag where the total duration value is stored. The value is stored in seconds.
(Hours) Data Type	Indicates the type of profile where the total hour duration value is stored.
(Hours) Location	Indicates the buffer location of the total hour duration value.
(Hours) Field	Indicates the duration in total hours for the hour portion of the time remaining.
(Minutes) Data Type	Indicates the type of profile where the total minute duration value is stored.
(Minutes) Location	Indicates the buffer location of the total minute duration value.

Field	Description
(Minutes) Field	Indicates the duration in total minutes for the minute portion of the time remaining.
(Seconds) Data Type	Indicates the type of profile where the total second duration value is stored.
(Seconds) Location	Indicates the buffer location of the total second duration value.
(Seconds) Field	Indicates the duration in total seconds for the second portion of the time remaining.

Configuring the node – Time Remaining

Follow these steps to edit the node configuration.

1. For each relevant duration, use the drop down lists to select the profile tags and fields that store the duration value.

   Select the following for each duration type:

   - (Total Seconds) Data Type
   - (Total Seconds) Location
   - (Total Seconds) Field
   - (Hours) Data Type
   - (Hours) Location
   - (Hours) Field
   - (Minutes) Data Type
   - (Minutes) Location
   - (Minutes) Field
   - (Seconds) Data Type
   - (Seconds) Location
   - (Seconds) Field

   For more information about the fields on this screen, see Configuring the node – Time Remaining.

2. Click **Save**.

Tracker Account State Branch

The Tracker Account State Branch feature node routes the call based on the state of the caller's account. The wallet information will be retrieved from the subscriber's tracking domain if the wallet is distributed across separate tracking and charging domains.

Note: If the VWS is used for both the tracking and charging domain and an Account State Branch node is placed in front of the TASB node in the control plan, then the TASB node is ignored. The call will be routed based on the wallet state returned by the ASB node.

Node exits – Tracker Account State Branch

This node has one entry and eight exits. The number of exits cannot be changed.

Note: These exit descriptions are specific to the responses received from a VWS. You must specify a VWS domain type when configuring the tracking domain.

Exit	Cause	Description
1	Active	The subscriber account is active.
2	Frozen	The subscriber account has been Frozen due to dishonesty.
3	Preuse	The subscriber account has not yet been used.
4	Suspended	The subscriber account is Suspended.
5	Dormant	The subscriber account is Dormant.
6	Terminated	The subscriber account has been Expired.
7	Unsupported	Either, error / failure, or the Domain being used does not support this feature node.
8	Abandon	The caller has abandoned the call.

Configuring the node – Tracker Account State Branch

This node requires no configuration data. You may change the **Node name**, if required.

Wallet Life Cycle Period Branching

The Wallet Life Cycle Period Branching feature node allows you to check if the subscriber is assigned to the WLC period of a WLC plan.

Node exits – Wallet Life Cycle Period Branching

This node has one entry and four exits. You may add exits, to match the periods of the specified Wallet Life Cycle Plan. The maximum number of exits is limited to 20.

Exit	Cause	Description
1	Wrong Plan	Subscriber product type is not associated with the configured Wallet Life Cycle Plan.
2	Not in Period	Subscriber account is not currently residing in any of the Wallet Life Cycle periods configured to exit branches.
3	Unsupported	Not all capabilities are met.
4	Error	General error.

Configuring the node – Wallet Life Cycle Period Branching

Follow these steps to configure the node.

1. Select the node you wish to configure.
2. Right-mouse click and **Edit Node Exits** to create the number of branches you require.
3. **Save** and return to the node.
4. Open the node.

   Result: You see the Configure Life Cycle Period Branching screen.
5. Select a **Wallet Life Cycle** plan from the drop down list of available WLC plans.
6. Select the Branch **Number**.
7. Select the WLC period and click **Move to branch>>**.

   Note: You may associate multiple periods with the same branch, but cannot assign a period to more than one branch.

   It is not necessary to assign all periods.
8. When you have assigned all the required periods to the branches, click **Save**.

Wallet State Update

The Wallet State Update feature node sets the current wallet to the configured state.

Node exits – Wallet State Update

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	The wallet state was updated.
2	Failure	The wallet state update failed.
3	Unsupported	This exit is taken if the wallet state update capability is not supported.

Configuring the node – Wallet State Update

Follow these steps to configure the node.

1. From the **Wallet State** drop down list, select the state to change the wallet to.
2. To exclude the terminated date from the subscriber's SMS notification, select the **No terminated date** check box.
3. Click **Save**.

   Result: The subscriber associated with the wallet may receive a SMS notification, depending on the setting of the notification opt out flag. See *CCS User's Guide*, Adding Subscribers for configuration instructions.